

**2006 Annual Monitoring and Evaluation Report
National Forests
In Florida**



2006 MONITORING AND EVALUATION REPORT

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2006 ANNUAL MONITORING AND EVALUATION REPORT National Forests in Florida

Abstract

Monitoring, evaluation, and research are the heart of adaptive management and are the quality control mechanisms for the Revised Land and Resource Management Plan for the National Forests in Florida (Forest Plan). The National Forest Management Act planning regulations specify that "at intervals established in the Forest Plan, implementation shall be evaluated on a sample basis to determine how well objectives have been met and how closely management standards have been applied. Based on this evaluation, the interdisciplinary team shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the Forest Plan as are deemed necessary." Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. Monitoring Tasks are listed under Appendix E of the Forest Plan.

Certification Statement

I have evaluated the monitoring results and recommendations in this Report. I have directed that the Action Plans developed to respond to these recommendations be implemented, unless new information or changed resource conditions warrant otherwise. I have considered funding requirements in the budget necessary to implement these actions.

With these completed changes, the Forest Plan is sufficient to guide forest management for the next fiscal year, unless ongoing monitoring and evaluation identify further need for change. Any amendments or revisions to the Forest Plan will be made using the appropriate NEPA procedures.

This report is approved:

Marsha Kearney
MARSHA KEARNEY
Forest Supervisor

September 30, 2007
Date

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Summary

Implementation of The Revised Land and Resource Management Plan for the National Forests in Florida (Forest Plan) began in June 1999. This report documents the results of monitoring how well goals and objectives of the Forest Plan have been met and how closely management standards have been applied in FY 2006 (October 2005-September 2006), the sixth full year of implementation.

Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. Specific monitoring questions are identified and directly linked to Forest Plan goals, desired future conditions, objectives, standards, guidelines and specific regulatory requirements. Every goal, objective, standard and guideline cannot be monitored. Relevancy to issues, compliance with legal and agency policy, scientific credibility, administrative feasibility, budget considerations, and impact on work force all influence monitoring priorities.

Major Findings:

Based on the expected annual average of outcomes for the planning period, most of the monitoring items reflect expected outcomes and are progressing at the rate necessary to achieve the desired conditions, goals and objectives of the Plan within the 10-year planning period. There are some areas where monitoring indicates follow-up action is needed.

Vegetation Management

Based on the expected annual average of outcomes for the planning period, the vegetation management program through timber harvests needs some follow-up action. The table below summarizes the situation concerning timber harvest objectives and accomplishments through fiscal year 2006.

It is obvious that the vegetation management objectives cannot be attained under current and anticipated budgets. Priorities need to be established for those treatments that are critical to TE&S habitat restoration and overall forest health.

Table 1. Cumulative Objectives and Accomplishments, FY 2000-2006

Clearcutting Sand Pine for Scrub Jay Habitat	
2000-2006 Objective (Acres)	28,000
Accomplishment (Acres)	18,746
Difference (Acres)	9,254
Thinning Over-stocked Pine Stands	
2000-2006 Objective (Acres)	36,400
Accomplishment (Acres)	11,531
Difference (Acres)	24,869
Uneven-aged Group Selection Regeneration Harvest	
2000-2006 Objective (Acres)	22,750
Accomplishment (Acres)	2,493
Difference (Acres)	20,257
Irregular Shelterwood Regeneration Harvest	
2000-2006 Objective (Acres)	1,316
Accomplishment (Acres)	0
Difference (Acres)	1,316
Longleaf Restoration removing off-site slash pine	
2000-2006 Objective (Acres)	8,260

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Accomplishment (Acres)	2,263
Difference (Acres)	5,997
Removing Slash Pine from Longleaf Stands	
2000-2006 Objective (Acres)	5,600
Accomplishment (Acres)	0
Difference (Acres)	5,600
Allowable Sale Quantity	
2000-2006 Objective (Million Cubic Feet)	72.1
Accomplishment (Million Cubic Feet)	44.6
Difference (Million Cubic Feet)	27.5

Prescribed Burning

Based on the upland pine Management Area 7.1 of 507,740 acres, 77% of this type was burned in the last 3 years (2004,2005, 2006). However, in FY 2006, 107,163 acres were burned; 72 percent of these acres were burned in the winter months, 28 percent of these acres were burned between March 15 and September 30, and 26% of acres were burned between May 1 and July 31. The Forest did not achieve this objective for FY 2006 due to lack of significant rainfall during the growing season (April – July).

Use of fire in the longleaf pine wiregrass ecosystem continues to be integral to the restoration of these systems and to recovery of the red-cockaded woodpecker. Both winter and growing season burns are being used in these recovery efforts. Internal and external dialog continues on the application and use of fire for these objectives.

Route Designation Process

During 2006, the Ocala National Forest worked on implementing the designated motorized routes in the former “restricted areas” and began evaluating the rest of the forest (the sand pine scrub). An Environmental Assessment for designating these routes in the sand pine/scrub ecosystem is expected to be completed in November 2007. The Apalachicola National Forest began a forest-wide motorized route designation process, and an Environmental Assessment and Decision Notice was completed in September 2007. The Osceola NF is expected to complete a motorized route designation process in early October 2007.

Wilderness and Wild and Scenic Rivers

Recommendations for the four rivers studied in the Revised Forest Plan, as well as the recommendation for Clear Lake Wilderness Study Area to be designated as wilderness, were not carried forward in FY2006. Legislative EISs for wilderness designation or wild and scenic river designation are not carried forward without support from the state’s congressional delegation and a commitment to introduce a bill into Congress. Florida’s congressional delegation should be contacted for support of a wilderness bill in Florida.

I. Introduction

Monitoring is the quality control mechanism for the Forest Plan. Monitoring elements covered in this report are listed in Chapter 5 of the Forest Plan. The report contains results and findings structured under three major headings: (I) Ecosystem Condition, Health, and Sustainability; (II) Sustainable Multiple Forest and Range Benefits; and (III) Organizational Effectiveness. Under each of these headings, Forest Plan goals, objectives, or standards and guidelines that apply are listed along with the monitoring questions, items to measure, and results.

This report also presents a Monitoring and Evaluation “Action Plan” that outlines actions to be taken in response to the results of monitoring. No single monitoring item or parameter automatically triggers a change in Forest Plan direction. An interdisciplinary, holistic approach is used to evaluate information and decide what changes are needed.

II. Detailed Monitoring and Evaluation Results and Findings

Ecosystem Condition, Health, and Sustainability

Forest Plan Goals:

- Maintain or, where necessary, restore ecosystem composition, structure, and function within the natural range of variability in all ecosystems, with emphasis on longleaf pine-wiregrass, sand pine-oak scrub, pine flatwoods, hardwood/cypress, oak hammock ecosystems, and other imperiled specialized communities.
- Manage floodplains, groundwater, lakes, riparian areas, springs, streams, and wetlands to protect or enhance their individual values and ecological functions.
- Conserve and protect important elements of diversity such as endangered and threatened species habitat, declining natural communities, and uncommon biological, ecological, or geological sites.
- Manage for habitat conditions to recover and sustain viable populations of all native species, with special emphasis on rare species.

1.1 Monitoring Question: Is the health of natural forest communities being maintained or improved?

Item to Measure: Management Indicators (Refer to Tables 5.2 and 5.3 in the Forest Plan)

Plants

Results: The monitoring strategy in the Forest Plan prescribes that this item be reported on a five-year frequency in order to discern significant trends in the indicators and management activities. Information on Threatened and Endangered plants and animals which are also MIS species are reported in this section of the monitoring report. A long-term vacancy of the Forest Botanist position has resulted in limited collection of plot data for FY 2005 and FY 2006.

The Forest Service and the Florida Natural Areas Inventory are updating monitoring methods for plant species. This monitoring was designed to provide the Forest Service with an easy method of tracking presence status and trends for tracking eight Federally listed species on the NFs in Florida. The focus on listed species rather than Management Indicator Species (MIS) is because the revised Planning Rule is expected to eliminate the use of MIS. The methodology will be based in part on information discussed in "*Presence-Absence versus Abundance Data for Monitoring Threatened Species*", Joseph et. Al, unpublished manuscript accepted March 6, 2006, Conservation Biology. Preliminary results will be available in the 2007 M&E Report.

Information from the 5-year Monitoring and Evaluation report is repeated here with additional narrative observations for the Apalachicola National Forest.

In 1994, as part of an ecosystem classification project, the National Forests in Florida entered into a contract with the University of Florida, to establish plots on the five districts on the National Forests in Florida. Data were to be taken from these plots on soils and vegetation. The plots were also to serve as permanent vegetation monitoring plots. Beginning in November of 1994, ninety

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plots were established on the Ocala National Forest, fifty on the Osceola National Forest, and one hundred one on the Apalachicola National Forest.

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In 1999 and 2000, those plots with recorded occurrences of MIS plants on the Ocala National Forest were identified and most were relocated. The area coverage of MIS plants in these plots was recorded a second time.

In 1996, plots were established to specifically monitor population trends of the Threatened and Endangered plants on the Ocala and Apalachicola National Forests. Initial data has been taken from most of these plots and several have been revisited.

The plots established by the University of Florida were intentionally placed on sites selected because they were thought to closely represent the potential natural vegetation of their respective communities. In order to track the success of efforts to improve or restore the natural native communities on degraded sites, plans are to establish similar monitoring plots on pine plantations and other degraded sites. Because of shortages of personnel with the expertise to accomplish this, the National Forests in Florida have an agreement with Florida Natural Areas Inventory (Florida's Heritage Organization) to establish such plots and to perform additional surveys for MIS, T & E, and Forest Sensitive Plants. To date Florida Natural Areas Inventory has established 23 monitoring plots, all on the Wakulla Ranger District, and recorded baseline data from these plots. Monitoring results and trend data of those MIS species occurring in the plots are shown under the discussion of each of those species.

Florida Bonamia (*Bonamia grandiflora*)

Results: A survey completed by the US Forest Service in 1994 found Florida Bonamia to occur in 93 stands on the Ocala National Forest. Populations of Florida Bonamia in the Ocala National Forest appear to be large and quite secure. The species may be spreading from a limited original range within the Forest. The distribution (as mapped from roads) is roughly oval-shaped and does not seem to coincide with any changes in vegetation or soils.

Table 1. Florida Bonamia Individual Plot Data

Plot #	1999	2000	2001	2003	2004	2005	2006
1	18	24	22	18	18	2	
2	147		230	238	225	51	
3	20		26	26	15	9	

Evaluation: Current and planned management practices ensure an abundance of the plant's early successional habitat. On the National Forest, the greatest threat is fire exclusion or lack of some other type of disturbance to remove the overstory and midstory of the scrub habitat at intervals short enough to prevent loss of this component between disturbances. The Forest Service frequently burns the longleaf pine/wiregrass sandhill community. Where Florida Bonamia occurs in this community, it appears to respond well to these frequent, low intensity fires. Bonamia is becoming established on roads and trails recently closed to OHV use.

Scrub Buckwheat (*Eriogonum longifolium* var. *gnaphifolium*)

Results: FNAI shows 92 records of occurrence in eight counties from Putnam County south to Highlands County. The US Forest Service completed a survey on the Ocala in 1994, finding scrub buckwheat in 54 stands.

Evaluation: On the National Forest, the greatest threat is fire exclusion or lack of some other type of disturbance to remove the overstory and midstory of the scrub habitat at intervals short enough to prevent loss of this component between disturbances. Little data is available on the effects of mechanical disturbance on *Eriogonum longifolium*, however mechanical disturbance is considered a threat to the species.

**Table 2. Ecosystem Plot data for
Scrub Buckwheat Number of plants/plot**

Year	Plot 1	Plot 2	Plot 3
1996	0	0	10
1997	0	0	8
1998	0	0	8
2000	0	0	9
2001	34	46	9
2004	11	22	10
2005	5	36	12

Harper’s Beauty (*Harperocallis flava*)

Results: There are ten records of occurrence in Liberty and Franklin Counties, all of which are within the boundaries of the Apalachicola Ranger District. Harpers beauty was recently discovered in Bay County on private property. The majority of the population was originally thought to be on or adjacent to the right of way of State Road 65, which runs north and south through the Apalachicola National Forest. Since 1992, the US Forest Service has conducted numerous surveys following fire. These surveys have revealed numerous populations growing in natural habitat.

Evaluation: The number of compartments that contain *Harperocallis flava* across the ANF remains within 90% of known sites. In three compartments surveyed, the qualitative ocular estimate of site density has not changed (decreased or increased by at least one category) beyond that consistent with management activities that may have potential impact such as prescribed burning.

Approximately 25-33% of known individuals in FY 2006 occur along the Hwy 65 corridor. The aggressive prescribed burning program by the Apalachicola National Forest has been effective in improving and maintaining habitat. The greatest shortcoming in the burning program is that much of the burning is under conditions where prescribed fires often fail to burn the ecotones where Harper’s Beauty occurs. The State Road 65 right-of-way belongs to the National Forest, and is under special use permit to the State of Florida. This gives the Forest Service considerable control over maintenance and other activities taking place on the right-of-way, making it possible to protect the roadside plants. The Forest Service

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attempts to restrict mowing to late in the growing season, after the roadside Harper's Beauty has been inspected and the seeds found to be mature. The timing of this mowing must be precise, however, and due to lack of coordination between the State of Florida Department of Transportation and the Forest Service, unauthorized mowing sometimes occurs. Most other construction and maintenance activities occur within 6 feet of the pavement.

This is not the case with the Apalachicola Northern Railroad, which runs north and south through the Apalachicola Ranger District, paralleling State Road 65 to the east. The railroad company, and not the Forest Service, owns this right-of-way which also supports a small component of Harper's Beauty.

There is a potential threat to the roadside plants on State Road 65 from inadvertent use of herbicides on the Railroad Company's right-of-way and from unauthorized construction work on the right-of-way. Those plants along the railroad right-of-way are not protected and could be eliminated by herbicide use and other maintenance or construction activities by the owner. The Forest Plan has an objective that calls for prescribed burning on average every three years. Standard VG-4 calls for locating and perpetuating seepage bogs and savannahs and Standard VG-18 was designed to limit mechanical site preparation and other soil disturbing activities in wiregrass communities. These standards should provide considerable protection for Harper's Beauty and if the goal of prescribed burning on a three-year average is aggressively pursued, sufficient suitable habitat may be maintained on the Apalachicola National Forest for this plant to persist. The greatest threats are the use of mechanized equipment in the suppression of wildfires and during timber harvest, and reduction of the overstory during unevenaged cuts which may reduce the needle cast of the remaining basal area to a point that fire does not carry sufficiently to maintain the habitat.

In 1999 three plots were established to monitor *Harperocallis flava*. Plots two and three have been sampled three times. Plot one was established in an area where *H. flava* was thought to occur, however, it was not during the flowering season and there appears to be none in the plot. Plans are to establish a new plot. The Forest Service needs to increase coordination with the State DOT to time mowing with flowering, and to also work with the Railroad company to improve the habitat for this species along the right-of-way they own.

Table 3. Ecosystem Plot data for Harper's Beauty Number of flowers/plot

Year	Plot 1	Plot 2	Plot 3
2000	0	55	15
2001	0	84	14
2002	0	43	4
2003		0	0
2004		23	8
2005		0	0
2006		42	12

White Birds-in-a-Nest (*Macbridea alba*)

Results: There are 66-recorded occurrences from four central Florida panhandle counties. The Apalachicola Ranger District occupies a considerable part of two of these counties, Franklin and Liberty. In the last ten years, the forest service has performed a number of surveys, mostly following burns.

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Table 4. Ecosystem Plot Data for White-birds-in-a-Nest Number of stems/plot

Year	Plot 1	Plot 2	Plot 3
1996	30	0	47
1999	130	263	45
2000	101	93	13
2001	136	365	18
2002	110	173	26
2003	0	0	0
2004	122	287	21
2005	0	0	0
2006	142	196	12

Evaluation: The number of populations (EO's) of *Macbridea alba* across the ANF remains within 90% of known locations. In three sites surveyed, the qualitative ocular estimate of site density has not changed (decreased or increased by at least one category) beyond that consistent with management activities such as prescribed burning. Individuals identified in the active Hunt Timber Sale will be monitored in FY 2007, one year post-harvest. The greatest threats to *Macbridea* are mechanical disturbance, most often associated with site preparation and fire suppression. The aggressive burning program on the Apalachicola can be credited with restoring and maintaining suitable habitat.

Godfrey's Butterwort (*Pinguicula ionantha*)

Results: There are 62-recorded occurrences from five central Florida panhandle counties. The Apalachicola Ranger District occupies a considerable part of the land area of two of these counties, Liberty and Franklin. In the last ten years the Forest Service has performed a number of field surveys for Godfrey's Butterwort. These surveys have provided the Forest Service with better knowledge of the distribution on the National Forest.

Table 5. Ecosystem Plot Data for Godfrey's Butterwort Number of plants/plot

Year	Plot 1	Plot 2	Plot 3
1997	20	54	86
1999	0	26	0
2000	0	65	34
2001	0	0	1
2002	10	0	4
2003	0	0	
2004	18	39	34
2005	49	57	51
2006	23	45	31

Evaluation: The number of populations (EO's) of *Pinguicula ionantha* across ANF remains within 80% of known locations. Frequency of *Pinguicula ionantha* individuals along cypress strand edges/ecotones has not decreased >20% from FY 2005 levels within appropriate habitat. Predictive models developed by Tug Kessler (Auburn University) indicate a greater range and distribution with ANF boundaries.

Small lewtons milkwort (*Polygala lewtonii*)

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Results: There are 36 occurrence records from six central Florida counties, beginning in Marion County south to Highlands County. A 1993 survey by the US Forest Service found the species in ten stands on the Ocala National Forest.

Table 6. Ecosystem Plot Data for Lewton's Polygala Number of plants/plot

Year	1	2	3
1996	44	13	33
1998	0	7	32
1999	0	22	64
2000	41	19	24
2001	35	4	9
2002	29	18	5
2003	14	11	7
2004	303	6	5
2005	75	14	4

Evaluation: The greatest threat is fire exclusion or lack of some other type of disturbance to remove the overstory and midstory of the scrub habitat at intervals short enough to prevent loss of this component between disturbances.

Florida Skullcap (*Scutellaria floridana*)

Results: There are 23-recorded occurrences in three central panhandle Florida counties. The Apalachicola Ranger District occupies a considerable amount of the land area of two of these counties, Liberty and Franklin. In the last ten years, the Forest Service has conducted field surveys to establish the distribution of the species on the National Forest. These surveys, following fire, have resulted in the collection of considerable information on the distribution of the species on the forest. No plot data was collected in 2006 because this species is best assessed following fire.

Evaluation: The number of locations containing *Scutellaria floridana* across the ANF remains within 90% of known sites. In two compartments surveyed post-fire, the qualitative ocular estimate of site density has not changed (decreased or increased by at least one category) beyond that consistent with management activities. More than 60 flowering stems/patches within the Smokehouse Timber were located following the fire and will be monitored following harvest activities in FY 2007. The perimeter surrounding the population in Compartment 73 has varied little in shape and size from previous post-fire surveys.

The greatest threats to Florida Skullcap are mechanical disturbance and fire suppression. In the last ten years the Apalachicola National Forest has limited clear cutting and intensive mechanical site preparation activities. The aggressive burning program on the Apalachicola can be credited with restoring and maintaining suitable habitat. VG-18 of the Forest Plan provides considerable protection for Florida Skullcap and its habitat. The objective to prescribe burn on average of every three years should encourage and maintain high quality habitat. If accomplished, this direction should help provide suitable habitat for Florida Skullcap.

Wiregrass (*Aristida beyrichiana*)

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Results: Wiregrass is distributed over all three of the National Forests in Florida and is a dominant or co-dominant of a number of communities. Many of the wiregrass-dominated communities on the National Forests in Florida are in relatively good ecological condition. This indicates they have not been significantly impacted by mechanical disturbance and fire has entered frequently enough to prevent significant encroachment by woody plants. However, a significant amount of the wiregrass communities were converted in the past to pine plantations, or mechanically disturbed in other ways. In other cases woody shrubs, hardwood trees, and species of pine not native to these communities such as slash pine or sand pine encroached into wiregrass habitat.

Evaluation: The greatest threat to wiregrass is inability to meet, or approach, the objective of burning on an average three-year rotation. Other significant threats include the use of mechanized equipment in the suppression of fires and the use of vehicles off established roads and trails.

Toothache Grass (*Ctenium aromaticum*)

Results: Toothache Grass, much like wiregrass, is a long-lived perennial bunchgrass that is sensitive to mechanical disturbance and heavily dependent on fire. It is found in mesic to poorly drained flatwoods, wet savannahs, and ecotones between pinelands and wetlands. Like wiregrass, it is not considered to be imperiled, but is an important indicator of the ecological health of the communities of which it is a component. Such communities are known to support many rare plant and animal species and healthy examples are becoming especially rare. The range of Toothache Grass includes all five districts of the National Forests in Florida, making it a useful management indicator on all districts.

Evaluation: The greatest threats are inability to meet, or approach, the objective of burning on an average three-year rotation. Other significant threats include the use of mechanized equipment in the suppression of fires and the use of vehicles off established roads and trails.

Sand Live Oak (*Quercus geminata*)

Results: Sand Live Oak was selected as an indicator of the oak dome communities that occur as inclusions within the longleaf pine islands on the Ocala National Forest. The communities referred to as longleaf pine islands are longleaf pine/turkey oak/wiregrass sandhill communities that occur within the scrub communities on the Ocala National Forest. There was concern that efforts to maintain and in some cases restore these longleaf pine islands would overlook the oak domes, which were historically and continue to be important inclusions.

Evaluation: While sand live oak occurs on all five districts of the National Forests in Florida and in other communities as well as the oak domes, it is regarded as a management indicator only on the two districts of the Ocala National Forest. It may, however, encroach into the longleaf pine/wiregrass communities if the fire return interval is too long. In this case, excessive encroachment by Sand Live Oak would indicate ecological degradation.

Curtiss Dropseed (*Sporobolus curtissii*)

Results: Curtiss Dropseed is a component of the mesic to poorly drained longleaf pine flatwoods. It has been observed on four of the five districts of the National Forests in Florida. Curtiss Dropseed is usually a co-dominant species in the groundcover, with such species as wiregrass and saw palmetto (*Serenoa repens*). It is a long-lived perennial bunch grass that depends heavily on fire and is sensitive to mechanical disturbance. It is distributed widely enough to be of value as a management indicator on a considerable portion of the National Forests in Florida. Curtiss Dropseed is ranked G3 by the Nature Conservancy and is proposed for inclusion on the next revision of the Region 8 Sensitive Species List.

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Evaluation: The greatest threats are inability to meet, or approach, the objective of burning on an average three-year rotation. Other significant threats include the use of mechanized equipment in the suppression of fires and the use of vehicles off established roads and trails.

Florida Dropseed (*Sporobolus floridanus*)

Results: Florida Dropseed is a component of the mesic to poorly drained longleaf pine flatwoods communities, flatwoods depressions, wet savannahs, and ecotones between pine flatwoods and wetlands. It is known to occur on both districts of the Apalachicola National Forest and on the Osceola Ranger District. It may potentially occur on the Ocala National Forest, but there are no known records of occurrence. It is a long-lived perennial bunch grass, heavily dependent on fire and sensitive to mechanical disturbance.

Evaluation: The greatest threats are inability to meet, or approach, the objective of burning on an average three-year rotation. Other significant threats include the use of mechanized equipment in the suppression of fires and the use of vehicles off established roads and trails.

Pineywoods Dropseed (*Sporobolus junceus*)

Results: Pineywoods Dropseed is known from both districts of the Apalachicola National Forest and both districts of the Ocala National Forest. There is some potential of occurrence on the better drained areas of the Osceola National Forest, but there are no records of occurrence on that forest.

Pineywoods Dropseed is not considered imperiled, but the sandhill community that supports it is ranked G2G3. The species distribution is broad enough on the forest for it to serve as a management indicator on the sandhill communities over much of the National Forests in Florida.

Evaluation: The greatest threats are inability to meet, or approach, the objective of burning on an average three-year rotation. Other significant threats include the use of mechanized equipment in the suppression of fires and the use of vehicles off established roads and trails.

Xyris stricta

Results: *Xyris stricta*, an obligate wetland species, is a component of the groundcover of the cypress (*Taxodium ascendens*) domes and strands. It is known from both districts of the Apalachicola National Forest and from the Osceola National Forest.

The structures of the communities in which *Xyris stricta* occurs, are dependent on relatively frequent fire to maintain a graminoid-dominated groundcover with little midstory development. *Xyris stricta* is thought to serve as a good indicator of the ecological health of these fire dependent wetlands.

Evaluation: According to the Forest Plan, cypress dominated wetland communities are not suitable for timber harvest. For this reason, there should be few impacts by forest service projects to these communities. The greatest threat is the lack of allowing fire to enter on a frequency enough to maintain community structure and composition. Another threat is the use of mechanized equipment in the suppression of fire.

Wildlife and Fish

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Southern Bald Eagle (*Haliaeetus I. leucocephalus*)

Results: Bald eagles currently nest along the St. John's River on and near the Ocala National Forest and in several locations on the Apalachicola National Forest and serve as an indicator of bottomland forest, floodplain swamp, and lake/pond habitat. Table 7 shows monitoring results for bald eagle pairs on the National Forests in Florida.

**Table 7. Number of Bald Eagle Pairs
National Forests in Florida**

Year	Apalachicola. NF	Osceola NF	Ocala NF
1992	1	0	20
1993	0	0	31
1994	0	0	37
1995	0	0	40
1996	0	0	32
1997	2	0	23
1998	2	0	54
1999	0	0	47
2000	0	0	48
2001	1	0	54
2002	1	0	49
2003	2	0	55
2004- 05	5	0	49
2005- 06	6	0	50

In 2005-2006, bald eagles on the Ocala National Forest produced 37 downy young. From these, 33 fledglings were successfully produced. Chicks documented to survive to 8 to 11 weeks are assumed fledged, based on 93% (41 of 44) survival rate of 7-8 week-old chicks documented in: Wood, P. W. and M. W. Collopy, 1995. *Population ecology of subadult southern bald eagles in Florida: post-fledging ecology, migration patterns, habitat use and survival. Florida Game and Fresh Water Fish Commission Nongame Project NG87-026. Tallahassee, FL. 111pp.* This count of downy/fledged young is significantly below previous year's counts. This is due to a modification in the way the data is being reported. In previous years, nests adjacent to the ONF boundary were included in the ONF count, reasoning that these birds made use of the Forest for hunting. This policy was changed (by FWC) for the 2005-2006 survey year. The bald eagle population on the Ocala National Forest has been stable to increasing for more than 10 years, and the Apalachicola population is beginning to increase.

Table 8. Active Nests/Fledglings National Forests in Florida

Year	Apalachicola NF	Osceola NF	Lake George RD	Seminole RD
1992	0/0	0/0	19/22	1/1
1993	0/0	0/0	28/19	3/3
1994	0/0	0/0	35/38	2/5
1995	0/0	0/0	36/32	4/3
1996	0/0	0/0	30/32	2/1
1997	0/0	0/0	22/18	1/2
1998	0/0	0/0	47/41	7/3
1999	0/0	0/0	44/52	3/2
2000	0/0	0/0	43/49	5/5

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2001	1/1	0/0	47/50	7/7
2002	1/2	0/0	44/47	7/8
2003	2/4	0/0	69/58	5/3
2004	2/3	0/0	47/31	6/5
2005	5/5	0/0	44/45	5/8
2006	6/3*	0/0	50/33**	

*Due to time constraints, all 6 confirmed active nests could not be visited at the proper times to determine numbers of nestlings and fledglings. Three fledglings is therefore a conservative count.

**Due to an administrative consolidation, the data will now be reported for the Ocala National Forest instead of separately for the Lake George and Seminole Ranger Districts. In past years, data for nests within 6 miles of the National Forest boundary has been reported. This will no longer be done. This is the reason for the significant decrease in the number of Ocala fledglings in 2006.

Evaluation: The desired outcome is a stable to increasing number of fledglings produced each year. Prior to 2005-2006, the trend was showing an increase. Fledglings averaged 23/year in 1991-93, averaged 37/year in 1994-96, declined to 20 in 1997, increased from 44 to 58 between 1998-2001, and increased again in both 2002 (57 fledglings) and 2003 (65 fledglings). The trend is confounded by the change in the reporting area on the Ocala. We will have to examine future year's counts to reestablish a trend, but we have no reason to think there is a problem with the Ocala bald eagle population. Because of recovery of bald eagle populations throughout the lower 48 United States, the species has recently been removed from the federal endangered species list by the US Fish and Wildlife Service. The National Forests in Florida will continue to track the species as an MIS and as a Regional Forester's Sensitive Species.

Based on the reliable nesting and reproduction of eagles on the Apalachicola and Ocala National Forests, and the protection of hardwoods and cypress stands provided by forest-wide standard VG-8, viable populations of the eagle are expected to persist on the National Forests in Florida into the future.

Other bird species

Birds, with the exception of the bald eagle, are monitored primarily by the Breeding Bird Survey (BBS) routes and by the R8Bird (off-road) point counts. Each BBS route is 25 miles long; typically along a minor paved road or a natural-surface forest road. Each route consists of 50 "stops", or sampling points ½ mile apart. One useful aspect of the BBS data is that it provides casual (or expert) birders a relative index of how likely it is they will see a particular species of bird along a typical forest roadside, since that's where these data are collected. Additionally, the National Forests in Florida are participating, along with other National Forests in the southeastern region, in the land bird conservation, monitoring, and inventory strategy nicknamed "R8 Bird". The R8Bird point counts began on the Ocala districts with 80 sampling points in 1997, on the Wakulla District with 30 points in 2001, and on the Apalachicola District (30 points) and Osceola in 2002 (30 points). In 2004, the Osceola added 5 points in the northern (Pinhook) portion of the Forest to represent that unique habitat type. Each point samples approximately 2 acres of habitat and points are at least 1/2 mile apart. Point locations were established based on the protocol outlined in "The Southern National Forest's Migratory and Resident Landbird Conservation Strategy" (USDA Forest Service, R-8, Fisheries, Wildlife, and Range Unit, June, 1996). In 2005 the Forest Service Regional Office contracted with Dr. Frank Thompson (North Central Forest Research Station) to analyze the R8Bird data collected to date. Preliminary results from that analysis will be reported for all bird species included in this Monitoring Report.

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Northern Bobwhite (*Colinus virginianus*)

Results: The bobwhite quail serves as an indicator species for sandhill and flatwoods communities on the National Forests in Florida. Call count routes in cooperation with the Florida Fish and Wildlife Conservation Commission and other monitoring methods are being used to develop information about trends for this species.

Because the FWC felt that the data was of marginal value, quail call count routes are no longer conducted universally on the National Forests in Florida. Call count data was collected on the Osceola only in 2002 and 2003. Quail will continue to be censused, along with all other bird species, on BBS routes and at the R8 Bird Point Count locations on all three National Forests.

Quail counts from all methods are generally very low but appear to be fundamentally stable on all forests (Table 9). The low densities appear to be in accord with the distribution maps for the area published by the BBS.

Table 9. National Forests in Florida Bobwhite Quail Counts Birds per Station

Year	Apalachicola RD: Call routes, R8Bird, BBS	Wakulla RD: Call routes, R8Bird, BBS	Osceola RD: Call routes, R8 Bird, BBS	Lake George RD: Call routes, Riverside (R8Bird), Ocala BBS	Seminole RD: Church Lake, Tomahawk, Paisley (R8Bird only)
1992	0.28, 0.08	0.54	No data, 0.02	0.2, 0.14	0.6, 2.4
1993	0.19, no data	0.19	0.24, 0	0.6, 0.1	0.9, <0.1
1994	0.18, no data	0.75	0.15, 0.10	<0.1, 0.1	0.7, 0.5
1995	0.23, 0.04	1.01	1.03, 0.08	0.9, 0.18	0.2, 0.3
1996	0.22, 0.12	0.21	0.46, no data	0.1, 0.14	1.0, 0.5
1997	0.33, 0.04	0.26	0.71, 0.08	0.1, 0.12, 0.25	0.8, 0.1, 0.8
1998	No data, 0.12	No data	0.98, 0.08	0.2, 0.06, 0.05	0.3, 0.5, 0.28
1999	No data, 0.22	No data	0.41, 0.18	0.5, 0.04, 0.13	0.9, 0.3, 0.08
2000	No data, 0.04	No data	0.08, no data	0.1, 0.14, 0.1	1.2, 1.1, 0.58
2001	No data, 0.01	No data, 0.97, 0.1	0.02, no data	No data, 0.38, 0.15	0.5, 0.9, 0.25
2002	No data, 0.08	No data, 0.1, 0.1	0.0, 0.1, 0.12	No data, 0.06, 0.05	0.45
2003	ND, 0.47, 0.06	ND, 0.13, 0.2	0.08, 0.2, 0.09	ND, 0.0, 0.11	0.0
2004	ND, 0.03, 0.1	ND, 0, 0.14	0.18, 0, 0.1	ND, 0.3, 0.1	0.2
2005	ND, 0.07, 0.09	ND, 0.13, 0.04	0.8, 0.09, 0.02	ND, 0.4, 0.1	0.6
2006	ND, 0.2, 0.05	ND, 0.26, 0.09	0.9, 0.09, 0.10	ND, 0.33, 0.10	0.35

In 2005 the Regional Office contracted with Dr. Frank Thompson (North Central Forest Research Station) to analyze the R8Bird data collected to date. The graphic below summarizes the Mean Abundance (per point) of Northern Bobwhite from 1997 through 2004 from Thompson's analysis (LaSorte, et al. in prep.):

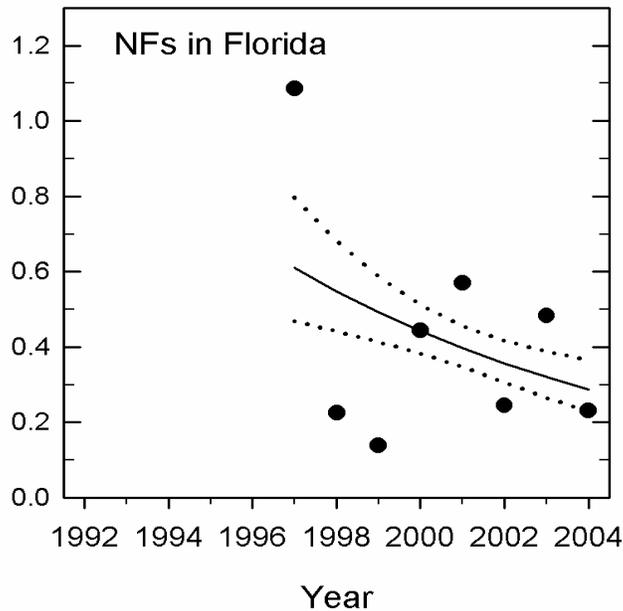


Figure 1. Northern bobwhite quail censused per R8 Bird sampling point, 1997 through 2004 on the National Forests in Florida.

Evaluation: The desired outcome is 7 or more coveys (groups of 6 – 20 birds) per 100 acres of suitable habitat with stable to increasing trend. This target was set in: *Hunter, C. et al. 2001. Partners in Flight Bird Conservation Plan for the South Atlantic Coastal Plain. American Bird Conservancy. 166pp.* Assuming 2 acres per point, the counts range from 0 to 120 birds per 100 acres for all data collected from 1991-2003 (Table 3). Although it is not possible to directly extrapolate from numbers of individual birds seen or heard to numbers of coveys, it is safe to assume that in some areas, the Forests have good quail populations, and in others the population is low to non-existent. Low quail densities on the National Forests are a reflection of low densities statewide. The National Forests are an active partner in the Upland Ecosystem Restoration Project, a state-wide initiative that has been established within the last year. This initiative will coordinate and promote habitat management for quail and other early successional species on private and public land and will hopefully reverse the downward population trend for quail and several other species. Through this partnership and partnership with the conservation group Quail Unlimited, the Forests have planned and funded quail management projects on all three Forests. Our data sources do not reflect consistent trends on the forests. BBS maps show a slight downward trend in those portions of the State that encompass the forest, but forest specific data does not appear to reflect any trends with any real certainty. Additional years of data collection at the R8 Bird sample points will give an improved idea of population trend in the future. The data analysis of LaSorte, et al. (in prep.) shown above as Figure 1 reflects a 10.2% annual decline in the species.

Pileated woodpecker (*Dryocopus pileatus*), PIWO

Results: This species is sampled using the BBS routes and the R8 Land bird survey. The pileated is found in all seasons in Florida with primary habitats being mature and extensive forests. It occurs in both deep woods and swamps as well as in rather open and upland forests. It seems most numerous in river-bottom hardwoods. Consequently, this species was chosen as an MIS in the Forest Plan for swamp communities including bottomland forest and strand and dome swamps. On the Ocala, the species also occurs in the longleaf pine and sand pine scrub communities.

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**Table 10. National Forests in Florida BBS Routes
Pileated Woodpeckers Counted per Station**

Year	Apalachicola	Osceola	Ocala
1992	0.08	0.14	0.04
1993	No data	0.14	0.04
1994	No data	0.14	0.04
1995	0.18	0.08	0.02
1996	0.08	No data	0
1997	0.32	0.12	0.06
1998	0.12	0.12	0
1999	0.12	0.12	0.02
2000	0.14	0.10	0.04
2001	0.22	No data	0.02
2002	0.13	0.11	0.04
2003	0.10	0.15	0.03
2004	0.12	0.14	0.03
2005	0.05	0.14	0.02
2006	0.07	0.14	0.03

Additional pileated woodpecker monitoring has been developed from points established as part of the R8 Landbird Monitoring strategy (Table 11). From 1997 through 2001, 40 points each on the Ocala Districts (Lake George and Seminole) were monitored. In 2001, 30 points on the Wakulla District were added. In 2002, 30 points were added on the Apalachicola Ranger District and 30 were added on the Osceola NF, for a total of 170 points on the National Forests in Florida. Five more were added to the Osceola in 2004, for a grand total of 175 sampling points.

**Table 11.
Pileated Woodpecker
R8 Landbird Monitoring - Birds per Point**

Year	Apalachicola NF	Lake George RD	Seminole RD	Osceola NF
1997	No data	0.28	0.05	No data
1998	No data	0.18	0.28	No data
1999	No data	0.18	0.25	No data
2000	0.06	0.10	0.13	No data
2001	0.13	0.40	0.23	No data
2002	0.13	0.13	0.10	0.17
2003	0.2	0.17	0	0.03
2004	0.4	0.05	0.18	0.37
2005	0.52	0.125	0.2	0.34
2006	0.38	0.05	0.125	0.37

Evaluation: The desired outcome is a stable to increasing trend. BBS trend data for the state indicate that this species has been stable to slightly increasing in Florida since 1966. Considered as a separate group, the National Forest BBS routes show a slightly declining trend. Data from the R8 Bird routes is still too limited to make any population trend inferences. The LaSorte, et al. (in prep.) data show a 7.5% annual population increase for the species, however:

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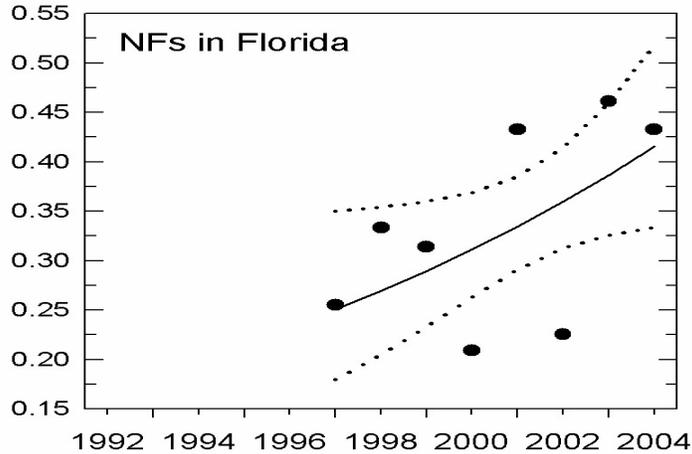


Figure 2. Pileated woodpeckers (birds per R8 Bird sampling point) on the National Forests in Florida, 1997 through 2004.

Forest plan standards and guides (VG-8, VG10, VG-11, VG-12) exclude hardwood stands from management for timber production and will retain large pine trees across the landscape that will eventually become the large snags necessary for pileated woodpecker nesting habitat. Adherence to these standards is expected to retain viable and increasing populations of this woodpecker across the National Forests in Florida.

Prothonotary Warbler (*Protonotaria citrea*), PROW

Results: Like the pileated woodpecker, this warbler’s key habitat requirements include swamps or bottomlands. Standing water and cavities in stumps, stub branches, or dead trees are necessary for nesting. The species is a secondary cavity nester; dependent on other species to excavate the cavities it uses for nesting. Because it is much smaller than the pileated woodpecker discussed above, it can nest in cavities in smaller trees; it will accept trees with a DBH as small as 6 inches (*P. Hamel, The Land Manager’s Guide to Birds of the South. The Nature Conservancy, 1992*). This species is a neotropical migrant, wintering south of the United States. It is one of the small number of warblers that breeds in Florida. It arrives in late March to mid-April and departs in mid-August to mid-September. Detections of this species are variable on the BBS routes for the National Forests in Florida. BBS trend maps show a downward trend in Florida, but trends on only the National Forest routes show populations to be stable.

**Table 12.
National Forests in Florida BBS Routes
Prothonotary Warblers Counted per Station**

Year	Apalachicola	Osceola	Ocala
1992	0.46	0	No habitat on route
1993	No data	0.08	No habitat on route
1994	No data	0.06	No habitat on route
1995	0.58	0.04	No habitat on route
1996	0.56	No data	No habitat on route
1997	0.40	.04	No habitat on route
1998	0	0	No habitat on route

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1999	0.56	0.04	No habitat on route
2000	0.46	0	No habitat on route
2001	0.34	No data	No habitat on route
2002	0.25	0.05	No habitat on route
2003	0.3	0.06	“ “
2004	0.4	0.05	“ “
2005	0.2	0.04	“ “
2006	0.25	0.05	“ “

Analysis of the R8 Bird data by LaSorte, et al. (in prep.), however, shows a -21.9% annual decline (Figure 3). Continued monitoring of R8 Bird points in addition to the BBS routes should produce a better picture over time.

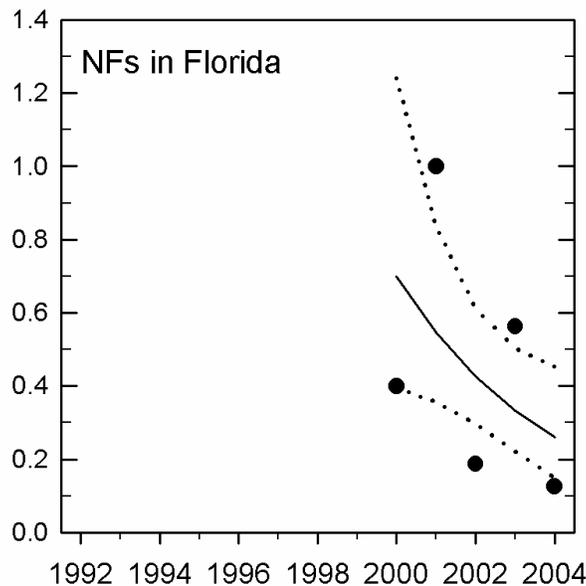


Figure 3. Numbers of Prothonotary warblers detected per R8 Bird sampling point, 2000 through 2004 on the National Forests in Florida.

Evaluation: The desired outcome is 15 or more pairs per 100 acres of suitable habitat with stable to increasing trend. This target is from: *Hunter, C. et al. 2001. Partners in Flight Bird Conservation Plan for the South Atlantic Coastal Plain. American Bird Conservancy. 166pp.* Data is highly variable, ranging from 0-29 pairs/100 acres (assuming 2 acres per point for data in Table 6).

Southeastern Kestrel (*Falco sparverius*), AMKE

Results: The kestrel was selected as an MIS to monitor the health of early seral stage sandhill and scrubby flatwoods. Breeding bird survey route and R8 Bird point detections have so far been limited to the Ocala National Forest (Table 13).

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Table 13.
Southeastern Kestrels Counted per Point

Year	Ocala BBS	Lake George R8Bird	Seminole R8Bird
1992	0.04		
1993	0.02		
1994	0.04		
1995	0.02		
1996	0		
1997	0	0.08	0.13
1998	0.02	0.03	0.13
1999	0.02	0.03	0.13
2000	0.10	0.10	0.08
2001	0.04	0.10	0
2002	0.04	0	0
2003	0.02	0.03	0.08
2004	0.03	0.1	0.05
2005	0.12	0.08	0.03
2006	0.03	0.17	0.1

Kestrel nest boxes are monitored for occupancy on the Lake George RD (Table 14). In 2002, time constraints prevented monitoring of all nest boxes. Thirty new kestrel nest boxes were installed on the Lake George District in 2002. Forty-seven kestrel boxes were built and installed in 2003, but a lack of staffing prevented monitoring for kestrel occupancy. Previous box checks have shown that 69% of the boxes were occupied by cavity nesting birds: 33% kestrel, 31% screech owl, and 5% great-crested flycatcher.

Table 14.
Kestrel Nest Box Checks
Lake George RD

Year	Boxes Checked/ Used by Kestrel
1992	127/23
1993	118/16
1994	201/31
1995	154/36
1996	147/31
1997	0/No data
1998	72/33
1999	6/2
2000	77/30
2001	34/14
2002	1/1
2003	Not Checked
2004	" "
2005	" "
2006	" "

Evaluation: The desired outcome is a stable to increasing trend. While the BBS trend maps show a decline for Florida, data is still too limited to make a reasoned judgment for the National Forests. Analysis of the R8 Bird data by La Sorte, et al. (in prep.) indicates a 9.7% annual decline. Besides being cavity nesters, kestrels are open area hunters, so the emphasis on sand

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pine regeneration and placement of nest boxes should enable the southeastern kestrel to persist as a viable species on the Ocala National Forest.

Wild Turkey (*Meleagris gallopavo*), WITU

Results: This species is found on the National Forests in Florida during all seasons of the year. It is rare over much of the coastal plain, but common in bottomland habitats. It is also found in a variety of other habitats including upland hardwoods, mixed forests, and pine forests.

The BBS routes on the Apalachicola National Forest have not been recording significant numbers of turkeys. Turkeys are too wary of humans to be counted accurately using a point count method. Track count transects conducted in cooperation with the FWC have, however, detected turkeys at very low densities. Approximately 200 miles of road transects have been surveyed annually since 1993 for tracks on both ranger districts. FWC staff has developed the following track indices.

**Table 15.
Wild Turkey Tracks/mile –
Apalachicola National Forest**

Year	Wakulla RD	Apalachicola RD
1993	0.17	0
1994	0.02	0
1995	0.10	0.30
1996	0.40	0.20
1997	0.30	0.30
1998	0.20	0.30
1999	0.36	0.25
2000	0.60	0.83
2001	0.17	0.17
2002	0.26	0.0
2003	0.57	0.09
2004	0.63	0.31
2005		
2006		

Trends are rather obscure with such low densities, but this species appears to be stable on the Apalachicola National Forest.

The BBS route on the Osceola National Forest has not been recording any significant numbers of wild turkeys. As mentioned for the Apalachicola BBS, point counts are not a good method for sampling turkey populations. Thirty-five permanent plots for implementation of the R8 landbird monitoring strategy have been installed on the forest, but it is unlikely these samples will yield any good population information for the same reasons the BBS points do not yield good wild turkey population data. There are no track count indices for this area available from the FWC, although they are comfortable enough with the population that spring turkey hunting has been permitted since 1980. Forest Service personnel routinely report incidental sightings of both adult and juvenile birds but there is not yet any consistent data on this species for the Osceola National Forest.

The Ocala National Forest monitors baited stations using the methods of: *Cobb, David. 1990. Survey Techniques for Wild Turkeys in Florida. Florida Game and Fresh Water Fish Commission. Tallahassee, FL. 23pp.*

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The Ocala National Forest has also been cooperating with the Florida Fish and Wildlife Conservation Commission in determining trends from track counts of wild turkeys. Commission biologists have determined a notable upward trend in wild turkeys on the forest. This trend is reflected by the Commission's decision in 1997 to institute a limited area spring hunt on the Ocala National Forest for the first time. The Commission opened spring hunting across the entire forest in 2000.

Table 16. Ocala National Forest - Turkey Monitoring Sites

Year	FFWCC Transects with Tracks	Lake George Bait Stations - % Active, birds seen per station
1991-92	24	
1992-93	23	
1993-94	31	55, 0.4
1994-95	84	38, 0.2
1995-96	59	56, 0.2
1996-97	105	43, 0.4
1997-98	142	74, 1.5
1998-99	132	72, 0.4
1999-00	129	54, 0.6
2000-01	134	44, 0.2
2001-02	108	46, 1.0
2002-03	98	67,3.2
2003-04	68	ND
2004-05	144	ND
2005-06	128	33,0.3

The FFWCC turkey track counts have represented a generally upward trend in the number of turkeys on the Ocala National Forest. The 2005-06 data shows a big drop, but one down year is not a cause for alarm. The permitted hunting trend in Table 17 shows Commission confidence in an increasing population trend sufficient to support sport hunting.

Table 17. Ocala National Forest - Turkey Permits and Harvest

Year	Permits Issued/Harvest
1997-98	400/unknown
1998-99	400/unknown
1999-00	400/unknown
2000-01	1460/35
2001-02	1460/36
2002-03	1460/46
2003-04	1186/34
2004-05	1460/48
2005-06	1460/33

Evaluation: The desired outcome is a stable to increasing trend. The wild turkey is present and populations appear to be stable at low densities on both the Apalachicola and Osceola National Forests. Trends are upward on the Ocala National Forest, with population increases such that the Florida Fish and Wildlife Conservation Commission instituted sport hunting on the Ocala National Forest for the first time in 1997. State biologists have not expressed any reservations about viable populations of the turkey on any of the three National Forests in Florida.

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Florida black bear (*Ursus americanus floridanus*)

Results: The black bear once ranged across the state, but is now estimated to occupy only 27% of its former range. Five major populations have been identified including Eglin Air Force Base, the Apalachicola, Osceola, and Ocala National Forests, and Big Cypress Swamp.

The Ocala population area includes approximately 2.2 million acres of high quality bear habitat, of which approximately 384,000 acres are in National Forest ownership. The Fish and Wildlife Service noted that the State's 1994 estimate of 125 bears for the Ocala National Forest was too small. This finding appears to be supported by an additional study being conducted by the FWC in cooperation with the Ocala and the Florida Department of Transportation (FFWCC). This study, centered on State Route 40 where it passes through the Forest, reported 252 captures of 204 separate bears between May 1999 and December 31, 2002. Almost equal portions of the Seminole RD and Lake George RD are included in the study area. During the second 6 months of the study, 11 bears were captured in only 20 trap nights of effort. The study area encompasses less than 25% of the Ocala National Forest, and the study area's population was estimated to total between 70-186 individual bears during the summer of 1999. Radio telemetry data indicated that of more than 200 road crossings of S.R. 19 and S.R. 40, only one study animal was killed in a vehicle collision. This occurred on S.R. 40, the highest road kill area for bears in Florida. While the study area is predominantly sand pine-oak scrub habitat, bottomland forest habitat exemplified by the Ocklawaha River system is also desirable bear habitat. A total population estimate for the study area (25% of the Ocala National Forest) for 2003 was made. It reports an estimated population of 138 bears for a density of 2.6 bears/km² (approx. 1 bear/mi²). One bear per square mile is considered by most bear biologists to be a high density for this species in the southeast (SAMAB 1996).

Black bear monitoring has been ongoing on the Ocala National Forest in cooperation with Commission biologists for many years. Track count monitoring is being accomplished annually with the results shown in Table 18.

Table 18.
Black Bear Track Count Indices
Ocala National Forest

Year	Tracks/100 miles
1991-92	24
1992-93	26
1993-94	21
1994-95	39
1995-96	27
1996-96	33
1997-98	44
1998-99	31
1999-00	56
2000-01	67
2001-02	55
2002-03	50
2003-04	73
2004-05	96
2005-06	78

Track counts are not accomplished on the Osceola, however much good information on the bear population is found in the US Fish and Wildlife Service report "Population Ecology of Black Bears in the Okefenokee-Osceola Ecosystem" (USFWS 2002).

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This cooperative (US Fish and Wildlife Service/Osceola National Forest/FWC/Georgia Department of Natural Resources) study encompassed two study areas, one each in Georgia and Florida. The Florida portion (approximately 100,000 ac) included the southwest portion of Pinhook Swamp, the western portion of Impassable Bay, and adjacent private timber company lands. Private lands predominated. Study personnel captured 79 individual bears in Florida from 1996-1999 and estimated a bear population of 90 – 114 animals at that time.

Six bear deaths were documented on the Florida study area over this period. One death (June, 1999) was a road-kill near Eddy Tower on FL Hwy 2, east of Forest Service lands in Pinhook Swamp. Three additional deaths were the result of poaching. By contrast, the Georgia study area incurred 70 bear deaths from 1995-1999. Legal hunting accounted for 57, poaching for 7 and only 2 were road-killed bears. Bear hunting is legal in Georgia but has been indefinitely suspended in Florida.

For the period 1976 – 1992, 7 of 317 (2.2%) bear road-kills statewide were documented in Baker and Columbia Counties, which encompasses the Osceola National Forest. Commission biologists did not identify any chronic road-kill problem areas on the forest.

The FWC views the northern portion of the Osceola as a desirable area for translocation of “problem” bears from other parts of the state. A moratorium on these translocations was in effect from 1995-1999 so as not to interfere with the Okefenokee-Osceola bear study. Translocations have resumed however, and a new, more specific bear relocation policy has recently been worked out between FWC and the Forest Service.

Track counts are conducted on the Apalachicola National Forest in cooperation with Commission biologists (Table 19.). As previously noted, the Apalachicola National Forest is one of the five major black bear population sites in the state. Data for 2005 and 2006 was not available from FWC at time of publication.

Table 19.
Black Bear Track Counts – Tracks/100 miles
Apalachicola National Forest

Year	Apalachicola RD	Wakulla RD
1993	2	3
1994	1	1
1995	1	1
1996	0	4
1997	12	4
1998	16	11
1999	14	19
2000	3	10
2001	2	15
2002	2	10
2003	2	35
2004	16	75
2005		
2006		

While an overall increasing trend appears to be occurring, FWC staff suggests that these counts should be interpreted with caution. Large annual variability can occur in these counts, and the low numbers of detected tracks constrain interpretation of this data.

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Evaluation: The desired outcome is a stable or slightly increasing population trend, and a decrease in nuisance bear complaints. Track counts ranged from 0 to 4 per 100 miles on Apalachicola in 1991-96, and increased to 19 in 1999. Since then, they have fluctuated between 15 and 10 tracks per 100 miles. Track counts averaged 31 per 100 miles on Ocala in 1991-98, and increased to 56 and 67 in 1999 and 2000, respectively. For 2002-2003, the Ocala track count has dropped off to 50 per 100 miles. The bear population on the Ocala NF has been influenced by relocation of 44 nuisance bears from other areas in 1999-2001. In 2001-2002, there were 241 bear complaints filed, as opposed to 95 in 2000-2001. In 2002-2003, 294 bear complaints were filed on the Ocala, with 216 filed during 2003-2004. The number decreased again in 2004-2005 with 209 complaints filed. For the 2005-2006 reporting year, the number of complaints was back up to 241.

Commission biologists and National Forests in Florida personnel expect the black bear to maintain viable populations on all three National Forests. Total black bear numbers across the state, however, are likely to decline as development pressures erode the habitat base for this species on private lands. The National Forests in Florida will become even more important refuges for bear populations in the future.

White-tailed Deer (*Odocoileus virginianus*)

Results: Commission and Forest Service biologists have been cooperatively monitoring this species for many years on all three forests. Track count transects are being used routinely to obtain indications of trends.

Table 20.
Track Count Monitoring – White-tailed Deer
Tracks/mile

Year	Apalachicola RD	Wakulla RD	Ocala NF	Osceola NF
1992	3.81	7.63	13.6	5.5
1993	2.80	5.72	13.5	4.5
1994	3.11	3.98	14.8	ND
1995	3.10	5.23	13.8	4.1
1996	3.84	4.91	15.4	4.4
1997	6.11	5.08	12.8	6.0
1998	4.90	8.80	10.8	2.5
1999	4.20	8.50	10.5	2.3
2000	3.6	7.4	11.7	4.4
2001	3.6	7.6	10.8	2.9
2002	2.7	9.0	9.6	9.4
2003	2.2	13.2	9.5	7.2
2004	2.2	7.8	ND	6.4
2005	NA	NA	11.1	8.3/3.1**
2006	ND	ND	NA	12.5/6.2**

NA = Not Available

ND = No Data

** = Still/Dog Hunt Areas

Although track densities are low, twelve years of data show a relatively stable trend for the Apalachicola and the Wakulla, a long term decreasing trend for the Ocala, and an erratic, but generally increasing trend on the Osceola. Commission data show a drop in hunter harvest on the Ocala that appears to parallel the decline in the track count index. Reasons for these declines are unknown at this time, but may be related to increased levels of OHV activity and human use.

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Evaluation: The desired outcome is a stable to slightly increasing trend. Deer have remained on the landscape across the decades at varying levels, and a viable population is assured on all three national forests.

Sand Skink (*Neoseps reynoldsi*)

The sand skink occurs only on the Ocala National Forest and adjacent central Florida scrub habitats with loose, sandy soils.

Results: Sand skink monitoring using cover boards or at the permanent study sites (Tables 21 and 22, below) has not been done since 2003 because of personnel constraints. Information reported here is based on data collections from previous years. Little is known about this species due to its fossorial habits. It is difficult to monitor, but there has been some success with detecting this creature using the cover board technique. Additionally, the forest biologist has maintained a database of incidental sightings of animals or sign since 1969. As a result of the Ocala NF's new access management policy, an intensive monitoring event was conducted on the Seminole RD in April, 2007 (outside the reporting period for this monitoring report). Approximately 10 biologists from the Forest Service, the US Fish and Wildlife Service and the Florida Wildlife Commission gathered to survey a large area of the District that has in the past, and is expected to continue to receive significant OHV use (the area around Big Scrub Campground). No sand skinks were seen, but 2 or 3 of the "sine wave" tracks characteristic of sand skinks were noted.

The current cover board sampling transects have been established in suitable habitat in several locations, each with a series of 20, 12" square boards laid on cleared, sandy soil. Detections show as definitive "sine wave" tracks under the boards, caused by the skink's "swimming motion". Tables 16 and 17 show the results of past monitoring. Cover boards are monitored in March and April annually, during the peak period of sand skink activity. There are 20 boards each at 3 sites including a scrub site on Seminole RD, an ecotonal longleaf site on the Lake George RD, and a longleaf plantation on the Lake George RD. All 3 sites have known sand skink populations. The plantation had the least activity with 7 detections, ecotonal longleaf was intermediate with 13, and the scrub site had the most, with 19. The Lake George RD longleaf site was used for density determinations in 2000. In 2002, a survey was done of the Pinycastle Bombing Range, and sand skinks were found in a new location there. The number of known sites increased from 8 in 1990 to 32 in 2002. The Ocala National Forest is the northern periphery of the sand skink's range. Population densities are lower here than in the rosemary scrub of the Lake Wales Ridge.

Table 21.
Sand Skink Cover Board Detections -
Active Boards or Buckets/Total Boards or Buckets
Ocala National Forest

Year	Lake George RD	Seminole RD
1992	0/302	0/0
1993	0/0	0/300
1994	0/0	0/0
1995	35/567	0/0
1996	38/461	9/40
1997	5/256	2/200
1998	30/344	0/0
1999	0/0	0/0

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Year	Lake George RD	Seminole RD
2000	20/40	19/20
2001	17/40	16/20
2002	0/0	6/20
2003	1/20	0/0
2004	ND	ND
2005	ND	ND
2006	ND	ND

Table 22.
Sand Skink Densities at Study Sites –
Ocala National Forest

Year	Lake George RD	Seminole RD
1995	29/acre	No count
1996	14-24/acre	16/acre
1997	3/acre	No count
1998	31-111/acre	No count
2000	25-43/acre	68/acre
2001	No count	No count
2002	No count	No count
2003	No count	No count
2004	“ “	“ “
2005	“ “	“ “
2006	“ “	“ “

Evaluation: The current monitoring program for sand skink has shown presence of the species in a variety of scrub habitats, but there does not seem to be any conclusive correlation of sand skink population trends and management practices. They require loose, sandy soils on partially open sites. Intuitively, any activities which compact the soil or allow the vegetation to become too thick (both above ground and below ground) would be detrimental to sand skinks. Because of the difficulty of monitoring this species, its utility as a management indicator needs to be reviewed. Irrespective of the species' status as an MIS, it's populations on the ONF should continue to be monitored.

Largemouth Bass (*Micropterus salmoides*)

Results: The majority of largemouth bass habitats of these National Forests are natural lakes, most of which are seepage lakes formed by solution depressions. Since these lakes have no significant surface inflow or discharge, water quality is influenced by precipitation and soil characteristics of the immediate watershed. The majority of these lakes are therefore very acid, poorly buffered, and low in nutrient concentrations and productivity. Excavated ponds, most of which were created to provide fill for highways, are managed for sport fishing on the Osceola and Apalachicola National Forests. If left unmanaged, these ponds would also be acidic, poorly buffered, and low in nutrient concentrations and productivity.

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A largemouth bass monitoring program has been established on both types of water bodies to determine population trends and management effectiveness. These monitoring activities were designed to compare current conditions with a variety of available data. Lakes and ponds of the National Forests in Florida have been sampled with electrofishing equipment since the early 1980's. Data collected from these samples are summarized in tables containing information on relative abundance and occurrence of largemouth bass size-classes. This sampling is conducted every five years, therefore the data reported this year is the same as reported in the 2001 monitoring report.

Life history and population parameters most often utilized are spawning success and recruitment, measured as Young-of-Year (YOY) occurrence, and relative abundance of largemouth bass.

Tables 23 - 25 show the monitoring results in 9 excavated ponds on the Apalachicola National Forest, 14 excavated ponds on the Osceola National Forest, and 38 natural lakes on the Ocala National Forest.

**Table 23.
Monitoring Results
Apalachicola National Forest Managed Excavated Ponds**

Year	Number of samples	Samples with Largemouth bass	Samples with YOY Largemouth bass	Total Number Largemouth bass	Number Harvestable Largemouth bass	Relative Abundance Largemouth bass
1986-90	13	11	6	241	104	0.033
1991-95	35	35	15	899	450	0.102
1996-00	28	28	4	640	321	0.294

**Table 24.
Osceola National Forest Managed Excavated Ponds**

Year	Number of Samples	Samples with Largemouth bass	Samples with YOY Largemouth bass	Total Number Largemouth bass	Number Harvestable Largemouth bass	Relative Abundance Largemouth bass
1981-85	17	16	11	406	109	0.195
1986-90	14	12	7	185	58	0.099
1991-95	27	23	18	296	97	0.133
1996-00	40	34	21	352	203	0.138

**Table 25.
Ocala National Forest Natural Lakes**

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Year	Number of samples	Samples with Largemouth Bass	Samples with YOY Largemouth Bass	Total Number Largemouth Bass	Number Harvestable Largemouth Bass	Relative Abundance Largemouth Bass
1981-85	41	38	14	1120	447	0.192
1986-90	21	19	10	982	382	0.108
1991-95	27	25	12	835	272	0.120
1996-00	25	21	4	271	157	0.111

Evaluation: Trends indicated by these data suggest an acceptable level of harvestable and YOY largemouth bass occurrence and an increase in relative abundance in managed excavated ponds on the Apalachicola National Forest. There are no indications of significant adverse changes in the largemouth bass population characteristics of these ponds during the sample period.

On the Osceola National Forest, the number of samples without largemouth bass is the area of greatest concern. Two of these lakes have not supported a largemouth bass population during the course of this study. These two lakes, North Deerhole and Warmouth have been fertilized, but have not been treated with lime. One of the ponds, North Deerhole, is often the most acid lake sampled on the Osceola National Forest, commonly with a pH measurement of 3.9.

Again, on the Ocala National Forest, the number of samples without largemouth bass is the area of greatest concern. Largemouth bass populations have never been observed in two of these lakes, Gobbler and Lawbreaker. The two lakes are often the most acid lakes sampled on the Ocala National Forest. Both have recorded pH measurement of 3.9. During fall 2003, 4 more lakes were sampled and found to have no YOY largemouth bass. These lakes will be sampled again in fall 2004, anticipating (hopefully) higher water levels that will increase the possibility of largemouth bass spawning. These data will be included in the updated data tables presented in 2006.

High acidity is thought to have always been a characteristic of these water bodies, and the largemouth bass has of necessity adapted to these conditions. These lakes are among the most acidic in the United States, and although it has generally been accepted that fisheries are severely impacted below pH 5.0 and are nearly destroyed below pH 4.8, there has never been a documented fisheries loss to a Florida acidic lake. Fish populations of these acid lakes may be more tolerant to acid conditions than the northern fish communities.

Trends observed in these data and concerns for future impacts of acidic precipitation must therefore be given serious consideration. Guidelines in the Forest Plan may not offer an opportunity to engage in proactive management necessary to protect the viability of largemouth bass in the natural lakes of these forests.

1.2 Monitoring Question: What are the habitat conditions of the major habitat associations?

Item to Measure: Acres of each habitat association by major forest type age class

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Results: This monitoring item is to be reported at five-year intervals according to the Forest Plan monitoring strategy. It was reported in the 2004 Five-Year Forest Plan Monitoring Report.

Forest Plan Objective:

- Provide the following habitat conditions in the next 10 years:

Table 26. Habitat Association Objectives

Habitat Association	Apalachicola NF	Osceola NF	Ocala NF
Sandhill and Scrubby Flatwoods			
0-10 age class	8,152	N/A	2,947
11-30 age class	7,820	N/A	9,090
31-80 age class	7,034	N/A	8,786
81+ age class	7,059	N/A	25,485
Mesic Flatwoods and Wet Flatwoods			
0-10 age class	1,500	1,000	78
11-30 age class	60,413	27,598	10,537
31-80 age class	158,813	76,541	22,975
81+ age class	63,630	15,346	4,557
Xeric Hammock, Upland Hardwood Forest, and Slope Forest			
0-20 age class	400	0	834
21-60 age class	1,717	53	5,449
61-100 age class	4,231	158	4,251
101+ age class	542	0	530
Scrub			
0-10 age class	0	0	40,000
11-30 age class	0	0	91,919
31-50 age class	0	0	53,435
51+ age class	0	0	20,789
Bottomland Forest, Floodplain Swamp, Hydric Hammock, Baygall, Basin Swamp, Strand Forest, and Dome Swamp			
0-20 age class	1,145	380	326
21-60 age class	1,995	1,280	1,642
61-100 age class	88,541	43,835	27,886
101+ age class	7,454	207	1,580
Bog, Seepage Slope, Depression Marsh, Wet			
	6,043	980	101

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Prairie/Savannas			
Titi/Brush	133,573	10,005	0
Aquatic (Lakes, Rivers, Streams, Ponds)	4,936	2,129	18,263

Evaluation: For ease of comparison, the percent age class objectives are listed in comparison to the 2004 percent age class distributions. The acres of Bogs, Seepage Slopes, Depression Marshes, Wet Prairie/Savannas, Titi/Brush and Aquatic (Lakes, Rivers, Streams, Ponds) habitats remained the same in our database. However, some of these areas have actually increased due to land acquisition, but these areas have not been inventoried for exact acres.

Habitat association objectives were based on four items: 1) the stand conditions at the time of plan implementation, 2) the planned acres of regeneration that would place different portions in the habitat associations in the 1-10 year age class, 3) the age class the regeneration would come from, and 4) the natural aging of the forest. For example, the objective for the sandhills and scrubby flatwoods habitat association is a result of the objective of restoring 10,000-15,000 acres of off-site slash and sand pine to longleaf pine. Most of the off-site slash pine is 25-30 years old so that is the age class that will be reduced. The mesic and wet flatwoods objective are the result of the acres in regeneration at the time of plan implementation and the objective to initiate irregular shelterwood harvest between 1,800 and 2,000 acres of slash pine forests. There is no planned regeneration harvest in any of the hardwood forest types, however in the xeric upland hardwoods on the Ocala NF, early scrub habitat is being created through the use of prescribed fire and mechanical means. The sand pine scrub habitat association objectives are a reflection of the objective to regenerate between 39,000 and 41,000 acres of sand pine.

The significant trend in these habitat associations is that most of the acres current in the 0-10 year age classes are 5-10 years old. Since the regeneration acres of off-site slash pine and sand pine scrub is behind schedule, the 0-10 age class objectives will not be attained.

Forest Plan Objective: 8

RCW Population Goals

Habitat Management Area (See Map Appendix F)	Population (2005)	Short-term (10 Year) LRMP Population Objective	Delisting Population Goal	Management Intensity Level (2005)
Apalachicola	473	500	500	1
Ocala	53	44	179	3
Osceola	88	151	462	3
Wakulla	104	250	506	3

RCW Cluster Goals

Habitat Management Area (See Map Appendix F)	RCW Recruitment Cluster Goals	New RCW Cluster Goals

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Planning Year	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Apalachicola	47	52	57	63	69	24	25	26	27	29
Ocala	5	6	6	7	8	3	3	53	3	3
Osceola	9	10	11	12	13	4	5	65	5	5
Wakulla	10	11	13	14	15	5	5	6	6	6

1.3 Monitoring Question: Are we maintaining RCW populations on the National Forests in Florida?

Item to Measure: Number of effective groups; number of active clusters, compartment group survey

Results: All three forests are continuing their long-standing monitoring of red-cockaded woodpeckers.

Since 1994, the Osceola RCW population has increased from 45 clusters through a combination of artificial cavity installation, internal translocation, and prescribed burning. In 1999, the forest entered into a challenge cost share project with Tall Timbers Research station to update its RCW geographic information system (GIS) layer. Every known active and inactive cavity tree was precisely located with geographic positioning system (GPS) equipment. During 2000, extensive monitoring was accomplished in preparation for translocation, and it was found that eggs were laid at 57 clusters. One-hundred-three nestlings were banded that field season. One male and two female fledglings were translocated within the population to help increase the number of active clusters. Due to wildlife staff vacancies, complete monitoring of RCW cavity trees and cluster status was not accomplished between 2000 and 2002. In 2003, the Osceola accomplished a complete tree status check of all known RCW clusters and re-GPS'ed all known active and inactive cavity trees. The District has made great efforts to keep the data base up to date since that time. The District currently has 96 active clusters (June, 2007) and manages a total of 110 clusters.

The Apalachicola National Forest contains two populations; the Wakulla and Apalachicola. The latter is the only recovered population with 489 known active clusters. The Apalachicola population annually provides fledglings for translocation to other populations in Florida, Georgia, Mississippi, and Alabama to help enhance their recovery. In 2006, 333 nestlings were banded and 40 fledglings were translocated to other populations. The Apalachicola population has remained stable since the early 1990s.

The Wakulla population contains 120 known active clusters. This represents a decline of approximately 20% from the 150 active clusters known in 1995 and 35% from the 186 known in 1991. The reason for the decline is still unknown. In the early spring of 2004, the Forest worked with the USFWS RCW Recovery Coordinator to develop a more detailed Plan of Work that we hope will give us a better indication of what may be causing the decline. Installation of 7 new recruitment clusters in 2006 and their almost immediate occupation (6 out of 7 were active in the spring of 2007) indicates that the decline may be due to lack of nesting cavities. Continued emphasis on recruitment cluster development, coupled with an aggressive prescribed burning program over the next 2-3 years will help to confirm this theory. This population is not providing fledglings for the translocation effort.

The Ocala population is the smallest of the four populations on the National Forests in Florida. In 1996 they were down to 10 active clusters. By 2001 there were 30 active clusters. Nine clusters

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had single birds for at least part of the year, and 17 of 21 (81%) potential breeding pairs nested. A record high of 31 fledglings was produced, of which 13 were banded as nestlings. By contrast, in 2006, the Forest had 53 active clusters and 158 active cavity trees. This population has benefited significantly from translocations from the Apalachicola. Prescribed burning to improve habitat and artificial cavity installation and translocation are all being used to enhance this population. Table 19 shows the trends in active clusters of the four RCW populations on the National Forests in Florida.

Table 27. Red-cockaded Woodpeckers – Active Clusters National Forests in Florida

Year	Apalachicola RD	Wakulla RD	Osceola NF	Ocala NF
1991	503	186	44	12
1992	503	182	43	11
1993	494	150	43	13
1994	500	Incomplete	45	10
1995	504	150	51	15
1996	504	154	53	10
1997	505	157	51	10
1998	505	125	Incomplete	13
1999	486	125	66	18
2000	486	138	Incomplete	22
2001	488	140	Incomplete	30
2002	486	140	Incomplete	29
2003	485	134	77	37
2004	473	137	84	44
2005	473	104	88	53
2006	489	120	91	53

Evaluation: By 2009, the goal by HMA is 500 for Apalachicola, 250 for Wakulla, 151 for Osceola, 32 for Island (LG), and 12 for Paisley (Seminole).

The Apalachicola population is relatively stable and shows a 3% increase since 2005. The Wakulla shows a decline of 4% since the Forest Plan was revised although there is an increase of 13% from 2005. The Osceola shows a 27% increase since the Forest Plan was revised and a 3% increase since 2005. The Ocala populations have increased 66% since the Forest Plan was revised, but had no increase from 2005. The steady increase since 1997 on the Ocala is in part due to translocations of young birds from the Apalachicola RD. The number of active clusters on the Ocala has nearly tripled since 1999, but non-paired birds occupy 30% of those clusters.

With additional emphasis on prescribed burning, aggressive application of artificial nest structures, and our successful translocation program, the viability of the red-cockaded woodpecker is ensured on the National Forests in Florida.

Forest Plan Standards and Guidelines WL-1 through WL-3 on page 3-27 of the Forest Plan provide for an exception on the Apalachicola RD to the foraging requirements found in the RCW EIS.

1.4 Monitoring Question: What are the effects of the reduced foraging standards on the Apalachicola National Forest?

Items to Measure: Cluster activity status, group size, nesting success, chicks reaching banding age, and number fledged per active group

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Results: This question has been removed from the Monitoring and Evaluation Report as a result of Amendment 3 of the Revised LRMP. With the change to the 2003 RCW Recovery Plan this item was no longer needed. The population is believed to be stable.

Forest Plan Objective:

- Maintain a dynamic system of at least 45,000 to 55,000 acres of habitat capable of supporting scrub jays on the Ocala NF. The 10-year population objective is 742 to 907 groups.

1.5 Monitoring Questions: What are the population trends of scrub jay? How is management affecting scrub jay? How many acres are suitable for scrub jay?

Items to Measure: Scrub jay population demographics, reproduction, dispersion, number of acres in 3-15 year age class in sand pine.

Results: The scrub jay is federally listed as threatened. It is found only in peninsular Florida, nesting in oak scrub or sand pine-oak scrub habitat. The Ocala is the only National Forest with this habitat type. The jay was selected as an indicator of healthy scrub, since this species nests only in early seral stage scrub. It is quite selective, being limited to open scrub habitats in sandy areas.

Because prescribed fire is so difficult to control in scrub, and because of smoke management issues, timber harvest is the primary management tool for maintaining scrub jay habitat on the Ocala National Forest. Clear-cutting of mature sand pine regenerates the scrub habitat necessary for the jay. The resulting scrub is generally suitable for nesting for 10 - 12 years. By this time the scrub is typically overtopped by young sand pine, rendering the site unsuitable for the jays. A regular cycle of sand pine regeneration is being employed to maintain the jays across the scrub on the Ocala National Forest. At the end of FY 2000, there were 62,627 acres of sand pine scrub in the 3-15 year old age class. The latest data we have available (Spring, 2006) indicates that we currently have about 50,000 acres of 3-15 year old sand pine scrub on the Ocala, however scrub older than about 12 years does not receive significant FSJ use. The actual acreage of effective FSJ habitat (3 – 12 years old) is more like 35,000 acres.

Forest wide monitoring for numbers of clans (family groups) and individual birds has been done since 1994. The Ocala National Forest surveys approximately 25% of suitable habitat per year by playing a scrub jay call tape and recording number of birds seen per site. An experienced observer interprets the number of groups based on the birds' behavior. New records are added to the Active List and formerly recorded sites are moved to historical status based on survey results. Results are shown in Table 29. Demographic monitoring by Dr. Kay Franzreb of the Forest Service's Southern Research Station began in November 2000.

**Table 29.
Ocala National Forest Scrub Jays
Groups/birds**

Year	Lake George RD	Seminole RD
1994	454/no count	245/no count
1995	460/1313	247/694

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1996	466/1398	249/693
1997	468/1336	259/774
1998	473/893	272/799
1999	333/893	413/1050
2000	351/1020	412/1048
2001	384/1120	401/969
2002	421/1258	394/955
2003	425/1251	355/881
2004	426/1253	354/868
2005	790/2,136**	
2006	786/2,129	

**Due to an administrative consolidation, the 2 Districts will be reported as a single unit from 2005 forward.

Evaluation: In the last ten years from 1994 to 2004 the number of groups increased from 707 to 780 (10%). Data from the 2005 and 2006 surveys show that the increase is continuing. The number of groups increased 13% from 1994-2001. In 2002, the total number of groups increased 4% over 2001 and the total number of birds increased by 6%. For 2003, the number of groups decreased from 815 to 780, and total birds decreased from 2213 to 2132. Both are decreases of 4%, and this is the first overall decrease since we have been maintaining monitoring records on scrub jays. The 10-year population objective in the Forest plan is to maintain a population between 742 to 907 groups. This objective is being met.

The viability of this species on the Ocala National Forest appears to be insured through the application of sand pine regeneration, thereby creating early seral stage scrub habitat necessary for breeding. The acres of sand pine scrub in the 3-15 year old age class is within the objective; however, there is concern about potential conflicts between the Forest Plan standard (VG-24) of maintaining 5% of suitable sand pine acres in age class 55-80 and the objective (Objective #9) to maintain 45,000 to 55,000 acres in scrub jay habitat.

An in-depth analysis was conducted on the Seminole Ranger District. Several scenarios were modeled using varying timber harvest rates and including scrub jay habitat in management areas unsuitable for commercial timber production. Given the 5% standard, scrub jay habitat on the Seminole Ranger District levels off at about 19,000 acres. Since the Seminole represents about 43% of the total scrub acres on the Ocala, the District would be expected to provide 43% of the suitable habitat objective, or 19,350 acres. This scenario is based on the assumption that burning and other disturbances occur as planned in the areas unsuitable for timber production.

Forest Plan Standards and Guidelines for PETS animals are found on pages 3-26 through 3-30 of the Forest Plan and includes standards and guidelines **WL-1** through **WL-19**.

Forest Plan Standards and Guidelines for PETS plants are found on pages 3-17 through 3-18 of the Forest Plan and includes standards and guidelines **VG-1** through **VG-3**.

1.6 Monitoring Questions: Are we maintaining viable populations of PETS animal species and habitats to support them?

Item to Measure: Number of PETS animals or acres of suitable habitat

Results and Evaluation

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Birds

Endangered

Mycteria americana/Wood Stork

Picoides borealis/Red-cockaded Woodpecker

Threatened

Aphelocoma coerulescens/Florida Scrub-Jay

Haliaeetus leucocephalus/Bald Eagle

Sensitive

Aimophila aestivalis/Bachman's Sparrow

Grus canadensis pratensis/Florida Sandhill Crane

Florida Scrub-jay, Bald Eagle and Red-cockaded Woodpecker are discussed previously in this report as Management Indicator Species.

Wood Storks are found predominantly in Florida. They nest north to the Okefenokee Swamp in Georgia and on rare occasions in coastal South Carolina. During the non-breeding warmer months, they are fairly common over much of Florida. Primary nesting habitats are swamps, tall trees along lakeshores or thickets of trees or large shrubs, mainly near fresh water.

A wood stork rookery has been documented in the SW portion the Osceola NF, south of I-10. The extended drought since 1998, however, has confounded efforts to determine trends for the species on the forest. On 4/15/04, it was found that this rookery had recently been reactivated, with 25 birds in residence. This is brand-new information, and we do not yet have any data on nests. This rookery was not active in 2005 or 2006. Nesting has yet to be documented on either the Ocala or Apalachicola NFs.

Bachman's Sparrow populations have declined range wide in recent decades. It favors open pine stands with grasses and scattered shrubs, oaks, or other hardwoods. Maintenance of old growth longleaf with 20-25 foot spacing between trees, and thinning benefits this species as well as the red-cockaded woodpecker. Nesting requirements include dense herbaceous cover interspersed with, or bordered by, shrubs and trees. Forested areas burned between the months of April and August will benefit this bird, by stimulating an increase in herbaceous vegetation.

Data from the various BBS routes on the Apalachicola NF; the Ft. Gadsden BBS route, in the southwest corner, the Bloxham route in the north-central portion of the Forest, the Apalachicola route through the central and western portions of the Forest, and the Alligator Point route in the southeastern corner of the Forest all suggest slightly different trend information. Combining of the data shows that while the number of birds seen annually is quite variable, the trend from 1995 through 2005 is declining slightly, with numbers up again in 2006..

Table 30.
BBS Route summary, 1995 - 2005 for Bachman's Sparrow,
Apalachicola NF.

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Year	Number of Birds
1995	31
1996	17
1997	22
1998	25
1999	38
2000	29
2001	17
2002	30
2003	17
2004	11
2005	10
2006	29

The Apalachicola's data at the R8 Bird sampling points shows the following for Bachman's sparrow:

Table 31.
Apalachicola NF
Bachman's Sparrow – R8 Bird Points

Year	Total Birds	Points Sampled	Birds/Point
2000	21	30	0.7
2001	43	30	1.43
2002	37	60	0.62
2003	62	60	1.03
2004	32	60	0.53
2005	59	60	0.98
2006	62	60	1.03

The Osceola BBS route data suggests that this species is found in low numbers with a declining trend along the northern portion of the forest. R8Bird point data collected in 2002 and beyond will provide information to supplement the BBS data and provide a better indication of the status of the Bachman's sparrow on the Osceola National Forest.

Table 32.
BBS Route summary, 1995 - 2005 for Bachman's Sparrow,
Osceola NF.

Year	Number of Birds
1995	17
1996	0
1997	3
1998	2
1999	2
2000	15
2001	0
2002	20
2003	17

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Year	Number of Birds
2004	8
2005	7
2006	7

The Ocala BBS data are not applicable as an index for Bachman's sparrow because suitable habitat is not well represented on this route. R8Bird point data show Bachman's sparrow to be the second most common species in the Ocala National Forest's longleaf pine sandhills habitat. An average of 2.2 Bachman's sparrows per point has been counted from the 60 points monitored on the Ocala over the last 6 years (1997-2002). Assuming 2 acres per point, the population index averages 110 birds per 100 acres of suitable habitat.

Table 33.
Bachman's Sparrow at R8Bird Longleaf Points, Ocala National Forest
Birds Per Point

Year	Lake George RD	Seminole RD
	Riverside Island	Paisley Woods
1997	.85	1.5
1998	1.65	1.6
1999	2.15	2.45
2000	2.55	1.45
2001	2.9	1.1
2002	2.9	0.93
2003	1.5	0.7
2004	0.75	0.38
2005	1.0	0.7
2006	0.85	0.68

Breeding Bird Surveys throughout the southeast indicate a stable to declining survey-wide trend (-2.0 percent average annual change from 1966-2004; 95% confidence intervals: -4.9 to +1.0 percent). The species is of concern because of a loss of fire-maintained habitats due to fire suppression and land-use conversion.

Population trends for the Bachman's sparrow were estimated in four physiographic areas and in six National Forests. Based on trend estimates and 90% confidence intervals where zero was excluded, there was evidence that the number of Bachman's sparrows remained consistent on National Forests in the Southern Region as a whole, increased on National Forests in one physiographic area, and increased in one and decreased in two individual National Forests, one of which was Florida (LaSorte, et al. in prep.).

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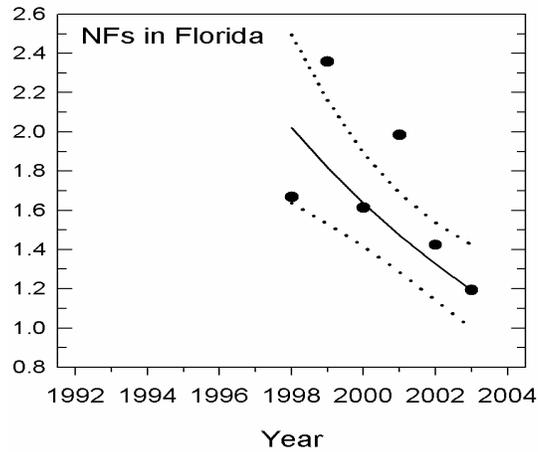


Figure 13. Bachman's sparrows per R8 Bird sample point, 1998 through 2004. LaSorte, et al. (in prep.)

Primary breeding habitat for **Florida Sandhill Crane** is found in prairies with marsh areas and small ponds as well as open pine savannas with small pools or ponds. Wintering habitat is similar, but they may also be found in drier areas. They can be seen in cattle pastures and along the margins of fresh water. The crane is found throughout peninsular Florida in low densities during both breeding and wintering seasons.

The BBS routes on the NFs in Florida have not been detecting this species. Potentially suitable habitat is found in the savannas on the western portion of the Apalachicola NF and the prairies on the Ocala NF. The Ocala R8Bird points near Lake Delancy in central Riverside Island record the Florida sandhill cranes every year. The extended drought has affected breeding habitats on National Forest lands.

Table 34.
Sandhill Crane at R8Bird Points - Ocala National Forest
Birds Counted

Year	Lake George RD
	Riverside Island
1997	2
1998	3
1999	6
2000	6
2001	7
2002	2
2003	2
2004	2
2005	3
2006	2

Fish

Threatened

***Acipenser oxyrinchus desotoi*/Gulf Sturgeon**

Sensitive

***Acipenser oxyrinchus oxyrinchus*/Atlantic Sturgeon (added to list effective 01/01/2002)**

***Alosa alabamae*/Alabama Shad (added to list effective 01/01/2002)**

***Ameiurus serracanthus*/Spotted bullhead (added to list effective 01/01/2002)**

***Cyprinella leedsii*/Bannerfin Shiner (dropped from list effective 01/01/2002)**

***Micropterus notius*/Suwannee Bass**

The **Gulf Sturgeon** is an anadromous fish which breeds in all the major rivers that empty into the eastern Gulf of Mexico. It is listed as a threatened species because of documented declines in population size in all rivers except the Suwannee River. It is likely that habitat degradation and loss of spawning areas are a major cause of the declines in gulf sturgeon populations. Dams on both the Apalachicola and Ochlockonee river systems prevent sturgeon from reaching historical spawning sites.

Forest Service ownership along the Apalachicola River is limited to approximately 7 miles of the east bank. This amounts to only about 2.9% of the 103 miles of the Apalachicola in the State of Florida. A 1999 survey of the river by USFWS found 321 gulf sturgeon in river reaches just below Jim Woodruff dam; well to the north of National Forest ownership, and no sturgeon as far south on the river as the National Forest ownership. Forest Service ownership on the Ochlockonee River is greater, and amounts to approximately 6 miles on both sides of the river and 25 miles on one side of the river. According to the USFWS, gulf sturgeon is only known from the Ochlockonee from Mack Landing south (to Ochlockonee Bay). That represents about 8 miles of one side Forest Service ownership and about ¼ mile of ownership on both sides. In a recent census (May 2004) they found 115 fish in this stretch of the river. Early in 2003, the US Fish and Wildlife Service designated these rivers, as well as river systems in Louisiana, Alabama, and Mississippi as critical habitat. The Forest Service's relatively minor ownership of the banks and the application of Forest Plan Standards & Guides (VG-8, WA-1 through WA-7), Forest Service management activities are not expected to have any effect on this species. Monitoring and trend information on this subspecies will be obtained periodically from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service.

The **Atlantic Sturgeon** lives in the Atlantic Ocean from Florida to Labrador, Canada. The Atlantic sturgeon makes long migrations, moving south to Florida in the winter. It has been collected from the St. Johns River in Putnam County. It "may have bred in the St. Johns River drainage at one time, although this has never been proved. In any event, reproduction almost certainly does not occur there today" (*Gilbert, C. R. (ed.) 1992. Fishes. Volume II in Ashton, R. (series ed.) Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville, FL 247pp.*).

The Ocala National Forest has ownership of about a quarter of the length of the western bank of the St. Johns River (including Lake George). Due to limited management activities in the zone of influence for the St. Johns River, and the application of Forest Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this subspecies will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service. This subspecies is a candidate for federal listing.

The **Alabama Shad** occurs in the Gulf of Mexico and enters drainages from the Suwannee River to the Mississippi River for spawning. Due to limited management activities in the zone of influence for the Apalachicola, Suwannee, and Ochlockonee Rivers, and the application of Forest

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Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this species will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service. The species is a candidate for federal listing. It was added to the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002.

The **Spotted Bullhead** occurs in the lower drainages of the Apalachicola, Ochlockonee, and Suwannee River systems. In 1978 this species was listed as Rare by the Florida Committee on Rare and Endangered Plants and Animals, a committee of the Florida Academy of Sciences. In 1992 it was eliminated (*Gilbert, C. R. (ed.) 1992. Fishes. Volume II in Ashton, R. (series ed.) Rare and Endangered Biota of Florida. University Presses of Florida. Gainesville, FL 247pp.*). Others were not in agreement with this assessment, because ten years later, the species is a candidate for federal listing. It was added to the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002. Due to limited management activities in the zone of influence for the Apalachicola, Suwannee, and Ochlockonee Rivers, and the application of Forest Plan Standards & Guides VG-8, WA-1 through WA-7, Forest Service management activities are not expected to have any effect on this species. Any monitoring and trend information available on this species will be obtained from the Florida Fish and Wildlife Conservation Commission and the US Fish and Wildlife Service.

The **Bannerfin Shiner** was dropped from the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002.

The **Suwannee Bass** is restricted to the Suwannee and Ochlockonee Rivers systems of Florida and Georgia. It generally prefers more rapidly flowing water along rocky shoal areas, but is not restricted to these areas. It can be found in large springs and spring runs as evidenced by its presence in the spring fed lower reaches of the Santa Fe and Ichetucknee rivers, which are tributary to the Suwannee.

Reproduction, including nest construction, is similar to largemouth bass. Degradation of water quality or habitat in the Suwannee and Ochlockonee rivers could threaten this species. As with mussels, watershed impacts related to agriculture, urbanization, and water management outside National Forest lands will have the definitive impacts on this species.

Reptiles

Threatened

Alligator mississippiensis/American Alligator
Drymarchon corais couperi/Eastern Indigo Snake
Neoseps reynoldsi/Sand Skink

Sensitive

Gopherus polyphemus/Gopher Tortoise
Gratemys barbouri/Barbour's Map Turtle (dropped from list effective 01/01/2002)
Lampropeltis getulus goini/Apalachicola King Snake
Pituophis melanoleucus mugitus/Florida Pine Snake
Pseudemys concinna suwanniensis/Suwannee Cooter Turtle
Sceloporus woodi/Florida Scrub Lizard
Stilosoma extenuatum/Short-tailed Snake

American alligators can be found in ditches, lakes, marshes, ponds, rivers, streams, and even brackish water. American alligators can occur in any wetland habitat. American alligator habitat exists on the Apalachicola, Ocala, and Osceola NFs. Breeding has been confirmed on the forests.

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Historically, alligators were depleted from many parts of their range because of market hunting and loss of habitat, and 30 years ago many people believed this unique reptile would never recover. In 1967, the alligator was listed as an endangered species (under a law that preceded the Endangered Species Act of 1973), meaning it was considered in danger of extinction throughout all or a significant portion of its range. A combined effort by the U.S. Fish and Wildlife Service and state wildlife agencies in the South saved these unique animals. The Endangered Species Act prohibited alligator hunting, allowing the species to rebound in numbers in many areas where it had been depleted. As the alligator began to make a comeback, states established alligator population monitoring programs and used this information to ensure alligator numbers continued to increase. In 1987, the U.S. Fish and Wildlife Service pronounced the American alligator fully recovered and consequently removed it from the list of endangered species. Although the American alligator is secure, some related animals, such as several species of crocodiles and caimans are still in trouble. For this reason, the U.S. Fish and Wildlife Service has listed American alligators as “Threatened because of similarity of appearance”, and still regulates the legal trade in alligator skins, or products made from them, in order to protect endangered species that have skin similar in appearance to alligators. The FWC permits alligator harvest in selected areas around the state, and the Ocala Wildlife Management Area (WMA) is the only area currently permitted on the National Forests in Florida. Records of alligator harvest from 1997 through 2005 are available from FWC:

Table 35.
Alligator harvest, Ocala WMA

Year	Harvest Quota	Harvest
1997	5	4
1998	5	1
1999	5	3
2000	4	4
2001	ND	2
2002	ND	3
2003	ND	3
2004	4	2
2005	ND	2
2006	ND	3

The **Eastern Indigo Snake** is a large, docile, nonpoisonous snake growing to a maximum length of about 8 feet. This species is currently known to occur throughout Florida and in the coastal plain of Georgia. Historically, the range also included southern Alabama, southern Mississippi, and the extreme southeastern portion of South Carolina.

The indigo snake seems to be strongly associated with high, dry, well-drained sandy soils, closely paralleling the sandhill habitat preferred by the gopher tortoise. During warmer months, indigo snakes also frequent streams and swamps, and some occasionally are found in flatwoods. Gopher tortoise burrows and other subterranean cavities are commonly used as dens and for egg laying. Eastern indigo snake habitat exists on the Apalachicola, Ocala, and Osceola NFs. Local herpetologists feel that indigos are still present in low numbers on all three forests, but until 2005, no sign of the species had been found on any of the three Forests since a 1998 sighting on the Osceola. In January, 2005, a snake was observed by a Forest Service employee on a road through the scrub, and in February, 2005, a road killed snake was found in a scrub-longleaf ecotonal habitat. In April of 2007, two indigo snakes were seen in the area of a private home adjacent to the Forest near Lake Kerr. We are aware of no sampling method that would help us detect a species that occurs at such low densities, so we are reliant on incidental sightings

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reported by employees or other friends of the Forests. The Ocala Forest Biologist maintains a database of indigo snake sightings dating back to 1948. The decline of the species is attributed to a loss of habitat due to land uses such as construction, farming, forestry, pasture and to over collecting for the pet trade. The snake's large size and docile nature have made it much sought after as a pet. The negative effect of "Rattlesnake Roundups" on the indigo snake are speculative. Both indigo snakes and rattlesnakes utilize the burrows of gopher tortoises at certain times. Rattlesnake hunters often pour gasoline down these burrows to drive out the snakes. While some indigo snakes may be killed by this practice, the actual degree of impact on the population is unknown.

The **Sand Skink** is discussed in the Management Indicator Species section of this report.

The **Gopher Tortoise** occurs in every Florida county, but is currently most numerous in southern Georgia and the northern and central portions of peninsular Florida. It has been documented on all three National Forests. This species requires well-drained loose soil for burrow construction, low-growing herbaceous forage, and open sunlit areas for nesting. The tortoise is primarily associated with longleaf pine sandhills, but is also found in sand pine scrub, dry prairies, pine flatwoods and mixed hardwood-pine communities. Old fields and roadside shoulders often support relatively high densities. Tortoises are found in relatively high densities on the Florida Gas pipeline right-of-way and in the Munson sandhills on the Apalachicola NF, the Olustee battlefield site on the Osceola NF and in the sand pine scrub on the Ocala NF. The latter forest probably has the highest numbers due to the greater extent of deep, well-drained sandy soils and the early seral stage habitat created by sand pine clearcuts.

There is currently no forest-wide trend information for any of the forests, but revised Forest Plan Standards and Guidelines provide for tortoise protection. Standards WL-10, 11 & 12 provide for burrow protection and safe movement of individuals away from possible harm from management activities. The Forests are approved (by the FWC) recipient sites for gopher tortoises translocated from a variety of private land development sites. We have developed a translocation monitoring protocol to which potential applicants must adhere if they want to move tortoises to the forest. The Forests recently signed an MOU with the St. Joe Land Co. under which we will accept relocated tortoises from some St. Joe developments. The MOU also incorporates a research component.

The **Barbour's Map Turtle** was dropped from the revised Southern Regional Foresters Sensitive Species List effective January 1, 2002.

The **Apalachicola King Snake** has been confirmed in Franklin and Liberty counties. This snake lives primarily along wetland margins of bayheads, creek swamps, acid bogs, savannahs, roadside ditches, dwarf cypress stands, and evergreen shrub communities. Individuals occasionally wander into adjacent longleaf pine flatwoods. Little is known about the life history and ecology of this snake. Food probably consists of snakes, amphibians, eggs of ground-nesting birds and turtles, and rodents. There is no Forest Service data on population trends.

Florida Natural Areas Inventory has confirmed **Florida Pine Snake** in counties that encompass portions of all three NFs in Florida. The statewide range of the snake extends from the Florida panhandle east across north Florida and south to Lake Okeechobee. Habitat includes longleaf pine – xerophytic oak woodlands, sand pine scrub, well-drained pine flatwoods and sandhill sites. There is little information on this species, but it has been described as being extremely fossorial. It particularly seeks out the tunnel systems of pocket gophers, and the burrows of gopher tortoises to a lesser extent. Prescribed fire is recommended as a habitat management tool to insure the survival of this species.

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Gopher tortoise Standards WL-10, 11 & 12 as well as the Forestwide objective to burn all burnable acres on a three-year average should enable the pine snake persist to persist on the forest. There is no forest wide population and trend data on this species.

The **Suwannee Cooter** is a river turtle. In Florida, the river cooters are restricted to rivers, spring runs, and associated backwaters and impoundments that drain into the Gulf of Mexico. They are herbivorous, feeding principally on aquatic vegetation. They rarely venture onto land except to nest -- a behavior that probably takes place within a relatively short distance of the water (hundreds of yards). Most nesting occurs from April through early August. *Pseudemys concinna suwanniensis* is a subspecies found from the Tampa Bay region northwestward to the Apalachicola River, and has been confirmed in Leon, Wakulla, Franklin, and Liberty counties.

Threats to this species include over harvesting for human consumption as well as habitat degradation caused by impoundments, dredging, and pollution. The Florida Fish and Wildlife Conservation Commission has established legal harvest limits for this species, which offers protections from excessive harvest. Current management standards (VG-8) in the forest plan direct that hardwood & cypress stands will not be managed for timber production. This offers habitat protection in those areas encompassed by National Forest ownership. Due to this protection, the cooter is low priority for monitoring and inventory. As with the Barbour's map turtle, we will rely on the latest information available from the Florida Fish and Wildlife Conservation Commission and the Florida Natural Areas Inventory for species trend information.

The **Florida Scrub Lizard** is found on the Ocala NF with a few records adjacent to the northern and southern borders of the Ocala NF. It prefers open sandy areas bordering sand pine scrub and sandhill associations, and could be described as a forest edge species. Habitat loss is the biggest threat to the scrub lizard. Scrub-jay management and sand pine management as prescribed in the Forest Plan will sustain forest edge in sand pine habitats on the Ocala. There is no forest wide population and trend data on this species, though several studies have been done in the Ocala National Forest that determined scrub lizard population densities under varying habitat conditions. Not surprisingly, the highest population densities are found in areas of open sand pine scrub with a high degree of sandy edge habitat.

Little is known of the life history and ecology of the **Short-tailed Snake**. It is a burrower, seldom seen above ground except in the spring and fall (April and October). It is restricted chiefly to long-leaf pine – turkey oak associations, but is occasionally found in sand pine scrub. Its original range appears to include only the Ocala NF, which contains one of the largest remaining blocks of appropriate habitat. The Ocala Forest Biologist maintains records on short-tail snake observations. Her database has records dating from 1974, and the last record she has was April, 2004. Management Objectives and Standards and Guidelines for the red-cockaded woodpecker in the Forest Plan will also provide protection for this species. There is no forest wide population and trend data on this species.

Amphibians

Threatened

***Ambystoma cingulatum*/Flatwoods Salamander**

Sensitive

***Amphiuma pholeter*/One-toed Amphiuma (added to list effective 01/01/2002)**

***Desmognathus apalachicola*/Apalachicola Dusky Salamander (added 01/01/2002)**

***Notophthalmus perstriatus*/Striped Newt**

***Rana capito aesopus*/Florida Gopher Frog (dropped from list effective 01/01/2002)**

Adult **Flatwoods Salamanders** are fossorial (adapted for living underground). Breeding takes place in isolated ephemeral ponds, typically open cypress or bay domes with well-established

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grassy vegetation in the water. The adults migrate to and from the breeding ponds, sometimes traveling over a mile from the pond. Adults have been observed crossing paved highways and dirt roads during migration. By analogy with similar species, the adults can be expected to spend the majority of their time underground. It is assumed that adults are dependent on the thick ground cover provided by fire maintained wiregrass communities, especially during breeding migrations. Optimum habitat is open, mesic woodlands of pine flatwoods maintained by frequent fires

The flatwoods salamander is found in the Apalachicola National Forest and in one compartment on the Osceola National Forest. The known breeding ponds on the Apalachicola National Forest are in the Apalachicola Savannahs land-type association. The Apalachicola National Forest flatwoods salamander population is being studied in a cooperative project with the Forest, The Nature Conservancy, and the FWC as partners. Even though the principal investigator is hampered by dry weather (see discussion below), she has discovered a number of previously unknown potential breeding ponds. One concentration of flatwoods salamanders has virtually disappeared from the Forest, apparently as the result of heavy site preparation (chopping and bedding) in and around breeding ponds on nearby private land. They may have also suffered from mortality while crossing a highway between the breeding ponds and the Forest. No breeding ponds for the flatwoods salamander have been confirmed on the Ocala NF, which lacks suitable habitat.

There is some concern that prescribed burning may have a lower tendency to burn through temporary ponds than does natural wildfire. It is possible that failure to reduce the duff layer in ponds may slowly reduce reproductive habitat for flatwoods salamanders. Extensive surveys for the flatwoods salamander have only been possible occasionally since Florida's extended drought began in 1998, because most breeding ponds have been dry. Because the species has only been found in a single location on the Osceola NF there are viability concerns for that population. The metapopulation on the Apalachicola is secure, however. The US Fish and Wildlife Service is in the process of finalizing Critical Habitat designation for this species. Although this designation will provide additional protection for the flatwoods salamander, it won't require significant change in National Forest management.

The **One-toed Amphiuma** inhabits mucky soils in alluvial swamps and floodplain streams in the Florida and Alabama panhandles and the northern Gulf coast of Florida. Only 30 occurrences are known. This species was added to the Sensitive list effective 01/01/2002.

The **Apalachicola Dusky Salamander** inhabits forested ravines and mucky floodplain and bottomland forests. They occur in Florida, Alabama, and Georgia. This species has been confirmed in Bradwell Bay Wilderness Area in the Apalachicola National Forest.

The **Striped Newt** is rare and localized in occurrence. They breed in isolated ponds in flatwoods, longleaf pine sandhills, and sand pine scrub habitats. Recent surveys have located only 32 breeding ponds in the entire geographic range of the striped newt - 17 of which are on the Apalachicola National Forest. All of the known breeding ponds on the Apalachicola National Forest are in the Munson Sandhills. Temporary ponds are being degraded by mud bogging throughout the urban interface zone, which includes all of the Munson Sandhills. A large area was closed to vehicular traffic in 2003 because of the damage being caused by mud bogging. The adult (eft stage) newts travel into the uplands surrounding the breeding ponds. Almost nothing is known about their biology in the uplands except they may travel considerable distances (at least half a mile and perhaps up to a mile and a quarter). A striped newt survey of 132 ponds in the Ocala National Forest in 1993 confirmed the striped newt in only one pond near Lake Delancy. The newts were neotenic (adults remained aquatic instead of metamorphosing to the terrestrial form). However, an 8-year study of 8 ponds by Dr. Katie Greenberg of the Southeastern Research Station in Norwalk and Salt Springs Islands confirmed newts in all 8 ponds. This study showed that newts may occur in any isolated pond in suitable habitat, but that

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several years of monitoring may be needed to catch the cyclical and eruptive pattern of newt reproduction (Table 29). This study confirmed the presence of terrestrial efts in the Ocala National Forest population, which was previously assumed entirely neotenic.

Table 36.
Ocala NF Pond Monitoring
Number of ponds with records, Total number captured

Year	Striped Newts	Gopher Frogs	Round-tailed Muskrat	Scrub Lizard
1994	4, 15	7, 46	4, 6	ND
1995	4, 4	8, 441	2, 4	ND
1996	4, 10	8, 240	0, 0	ND
1997	6, 94	7, 58	3, 3	ND
1998	7, 777	8, 655	0, 0	ND
1999	8, 876	4, 8	3, 3	ND
2000	7, 264	5, 7	1, 1	ND
2001	6, 101	7, 33	1, 1	ND
2002	8,37	8,89	1,1	5,9
2003	1,13	8,107	0,0	ND
2004	3,33	6,72	3,4	3,5
2005	1,3	5,216	0	1,1
2006	NA,88	NA,187	NA,1	NA,4

Florida Gopher Frog was dropped from the revised Regional Forester's sensitive list effective January 1, 2002.

Mammals

Endangered

Felis concolor coryii/Florida Panther

Myotis grisescens/Gray Bat

Trichechus manatus latirostris/Florida Manatee or West Indian Manatee

Sensitive

Corynorhinus rafinesquii/Rafinesque's Big-eared Bat (added to list effective 01/01/2002)

Mustela frenata peninsulae/Florida Long-tailed Weasel (dropped from list 01/01/2002)

Neofiber alleni/Round-tailed Muskrat

Podomys floridanus/Florida Mouse

Sciurus niger shermani/Sherman's Fox Squirrel

Ursus americanus floridanus/Florida Black Bear

The **Florida Panther** is a large, long-tailed felid with a great deal of color variation: pale brown or rusty upper parts; dull white or buffy under parts; and tail tip, back of ears, and sides of nose are dark brown or blackish. The only known self-sustaining population occurs in south Florida, generally within the Big Cypress Swamp physiographic region and centered in Collier and Hendry Counties. Currently, the wild population is estimated at 80 to 90 adult animals.

In general, panther population centers are in large remote tracts with adequate prey, cover, and reduced levels of disturbance. There are currently no known Florida panthers using National Forest lands. The Apalachicola and Osceola NFs are potential reintroduction sites (Thatcher et al. 2006). The Osceola was used in the mid-1990's as a reintroduction test site when sterile western cougars were released to test the possibility of future releases of Florida panthers.

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Populations of **Gray Bats** are found mainly in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee, but a few occur in northwestern Florida, western Georgia, southwestern Kansas, southern Indiana, southern and southwestern Illinois, northeastern Mississippi, northeastern Oklahoma, western Virginia, and possibly western North Carolina. Distribution within the range is always patchy, but fragmentation and isolation of populations has been a problem during the past three decades. The gray bat population was estimated to be about 2.25 million in 1970; however, in 1976 a census of 22 important colonies in Alabama and Tennessee revealed an average decline of more than 50 percent. Due to protective measures taken at high-priority colony sites in the late 1970s and throughout the 1980s, the declines have been arrested at some major sites, and those populations are now stable or in some cases increasing.

Gray bat colonies are restricted entirely to caves or cavelike habitats. Nine known caves are believed to house about 95 percent of the hibernating population. There are no caves on the National Forests in Florida that could provide the conditions required by gray bats for roosting and breeding habitat. Gray bats occasionally may occur over the forests during migration or foraging.

The **Florida Manatee**, or West Indian Manatee, is a large gray or brown aquatic mammal. Although primarily herbivorous, they will occasionally feed on fish. Manatees may spend about 5 hours a day feeding and may consume 4 to 9 percent of their body weight a day.

During the winter months, the manatee population in the United States confines itself to the coastal waters of the southern half of peninsular Florida and to springs and warm-water outfalls as far north as southeast Georgia. Manatees also winter in the St. Johns River near Blue Spring State Park. During summer months, they may migrate as far north as coastal Virginia on the east coast and the Louisiana coast on the Gulf of Mexico. Manatee populations also exist outside the continental United States in coastal areas of the Caribbean and Central and South America

Silver Glen Springs from its point of origin to its confluence with Lake George and Lake George itself are the only areas of habitat with known use in the forests. The manatee population was probably more abundant in the 18th or 19th century than today. Initial population decreases probably resulted from over harvesting for meat, oil, and leather. Today, hunting is prohibited and is not considered a problem; although there is an occasional poaching incidence. However, heavy mortality does occur from accidental collisions with boats and barges and from canal lock operations. Manatee population trends are poorly known, but deaths have increased steadily. Forest management, however, has virtually no impact on the species. The combination of high mortality rates and low reproductive rates has led to serious doubts about the species' ability to survive in the United States. The USFWS completed a Status Review of the species in 2007 and concluded that 1) so long as the rate of human-caused mortality remains at its current level, and 2) if natural springs can be enhanced to take the place of warm-water sources at power plants as they go off-line, populations in Florida should remain stable.

Current information and analyses indicate that the manatee population is exhibiting positive growth, good reproductive rates, and high adult survival throughout Florida, with the exception of the SW region of the state. The most significant threats to the population statewide are collisions with boats and potential loss of warm water habitat. In southwest Florida, the effect of those threats in combination with red tide is likely responsible for the negative growth rate. Conservation and monitoring issues on Forest Service lands for manatees, in coordination with federal and state agencies, should focus on limiting habitat loss and degradation, increasing manatee access to springs, implementing minimum flows, and assessing disturbance from boaters, swimmers, etc. in springs and spring runs.

The **Rafinesque's Big-eared Bat** inhabits forests throughout the southeast. They use caves in mountainous areas and hollow trees in the southern coastal plain. This species has been confirmed in the Ocala National Forest in the Little Lake George Wilderness Area. A big-eared bat monitoring protocol has yet to be developed for the National Forests in Florida.

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The **Florida Long-Tailed Weasel** was dropped from the Regional Forester's sensitive species list effective 01/01/2002.

The **Round-tailed Muskrat** is restricted to Florida and southeastern Georgia. Shallow marshes with emergent vegetation constitute preferred habitat. The best habitat on the NFs in Florida likely occurs in the wet prairies on the Ocala NF. The muskrat has been confirmed in Franklin, Leon, Marion and Wakulla counties (encompassing portions of the Apalachicola and Ocala NFs); and is likely in Baker, Columbia, Lake, and Liberty counties (encompassing portions of all three NFs in Florida). The extended drought has dried prairies in the Ocala National Forest that had round-tailed muskrat colonies about 10 years ago. The muskrat has persisted in creeks and streams, such as Juniper Creek, and has been recorded at small isolated ponds in sandhills habitat that are monitored for the striped newt and other amphibians (ref. Table 29). Muskrats have been recorded at 7 of the 8 sampled ponds, and in 9 of the 12 years included in the study. Because the muskrats were not trapped regularly, they were probably dispersing individuals or became trap-wise if resident. None of the ponds had the characteristic dome-shaped "muskrat house" that is formed of emergent wetland vegetation.

The known range of the **Florida Mouse** includes the northern two-thirds of the Florida peninsula and an isolated area near Carrabelle in Franklin County. This range encompasses portions of the Osceola and Ocala National Forests. There is no estimate of the statewide population, but the statewide trend is likely downwards due to habitat loss.

The mouse is restricted to fire maintained, dry, upland vegetation on deep sandy soils. The major habitats are scrub, including sand pine scrub and scrubby flatwoods, and sandhill. Scrub is the primary habitat. It has been confirmed in Marion and Lake counties (encompassing portions of the Ocala NF) and is likely in Columbia County (encompassing portions of the Osceola NF) (FNAI, 1997). Due to the abundance of preferred habitat, this species most likely occurs in the greatest numbers on the Ocala NF. The Florida mouse has also been captured during K.Greenberg's Ocala Pond Study. Ten were captured in 2005 and 3 were captured in 2006. The deep sandy soils preferred by this species are not found on the Osceola NF.

Sherman's Fox Squirrel is found on all three NFs in Florida. Total population size is unknown, but this species has declined in proportion to the loss of mature, fire-maintained longleaf pine. Longleaf pine – turkey oak sandhills and flatwoods are the optimum habitat for this squirrel. Home range size averages 100 acres for males and 50 acres for females.

Leaf nests predominate over cavities, and the squirrel may use up to 30 nests per year. More nests occur on the low slopes of sandhills rather than the uplands. The highest quality habitat might be along the edge of longleaf pine savannah and live oak forest, because live oak acorns appear to be a major food source when turkey oak acorn crops fail.

The **Florida Black Bear** is discussed in the Management Indicator Species section of this report.

Mollusks

Endangered

Ambia neisleri/Fat Three-Ridge Mussel
Lampsilis subangulata/Shiny-Rayed Pocketbook
Medionidus penicillatus/Gulf Moccasinshell
Medionidus simpsonianus/Ochlockonee Moccasinshell
Pleurobema pyriforme/Oval Pigtoe

Threatened

Elliptioideus sloatianus/Purple Bankclimber Mussel

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Sensitive

Alasmidonta wrightiana/Ochlockonee Arcmussel

Anodonta heardi/Apalachicola Floater (added to sensitive list effective 01/01/2002)

Aphaostracon pycnus/Dense Hydrobe

Cincinnatia vanhyningi/Seminole Spring Siltsnail (added effective 01/01/2002)

Utterbackia peggyae/Florida Floater (added to sensitive list effective 01/01/2002)

The **Dense Hydrobe** and **Seminole Spring Siltsnail** are endemic to Alexander Creek and its tributaries in the Seminole District, Ocala National Forest.

The other mollusks on the PETS list occur near and within the Apalachicola National Forest in the Apalachicola and/or the Ochlockonee river systems. The **Purple Bankclimber** and the **Fat Three-ridged mussel** have both been collected from the Apalachicola River adjacent to the forest, with the former collected from the Ochlockonee River within the forest boundaries.

The mussels appear to have decreased because of habitat loss associated with reservoir construction, channel construction and maintenance, and erosion. They are intolerant of the still water in the lakes behind the dams. Populations of the shinyrayed pocketbook, Gulf moccasinshell, and purple bankclimber have been isolated due to major impoundments on the Apalachicola, Flint, and Ochlockonee rivers. Smaller impoundments on tributary streams in the region have resulted in further population isolation of some of the species. None of these mussels occur in the navigation channels of the Chattahoochee or Flint rivers. The fat threeridge and the purple bankclimber occur in portions of the Apalachicola River that have a navigation channel.

Observations by Forest Service and US Fish and Wildlife Service biologists during a July 20-22, 1993 field review indicated that the lower, unimpounded reaches of these rivers provided suitable refuge for the two mussels. The biologists felt that no Forest Service activities were adversely affecting these species. The revised Land and Resource Management Plan for the NFs in Florida directs that hardwood and cypress stands will not be managed for timber production. Consequently, river bottomland hardwoods will be retained with minimum disturbance.

The Florida-Caribbean Science Center of Biological Resources Division of the U.S. Geological Survey (USGS) in Gainesville, Florida surveyed for mussels in both the ACF (324 sites) and Ochlockonee (77 sites) river systems from 1991 to 1993.

The Forest is a source of free flowing, clean water flow into the Apalachicola and Ochlockonee Rivers. Silvicultural operations could exacerbate sedimentation if no buffer zones were left to avoid erosion and filter runoff. Road construction could cause similar problems. Current silvicultural activities following best management practices are compatible with the continued existence of the species. Forest Service management under the revised LRMP does not constitute a threat to these species. Forest plan Standard and Guide VG-8 (LRMP P.3-19) and WA-1 through WA-7 (LRPM, p.3-24 & 3-25) are expected to protect water draining from National Forest lands. Watershed impacts related to agriculture, urbanization, and water management outside National Forest lands will have the definitive impacts on these species.

Crustaceans

Sensitive

Crangonyx hobbsii/Hobb's Cave Amphipod

Procambarus attiguus/Silver Glen Spring Cave Crayfish (added to list effective 01/01/2002)

Procambarus delicatus/Big-cheeked Cave Crayfish

Procambarus orcinus/Woodville Cave Crayfish

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Cave divers from the Woodville Karst Plain Project have documented **Hobb's Cave Amphipod** in the following sites in Leon and Wakulla Counties: Sullivan's Tunnel for the former and River Sinks, Shepard Blue Springs, Sally Ward Spring, and McBride Slough for the latter.

The **Silver Glen Spring Cave Crayfish** is endemic to Silver Glen Spring in Marion County in the Lake George District, Ocala National Forest.

The **Big-cheeked Cave Crayfish** is endemic to Alexander Spring in Lake County in the Seminole District.

The **Woodville Cave Crayfish** is found in limestone sinkholes and caves. It is known from 15 sites and is relatively common in the cave system in and around the eastern side of the Apalachicola National Forest. This system is presently being explored by the Woodville Karst Plain Project, a local group of cave divers and scientists. The divers have documented this species in Leon and Wakulla Counties.

Cave crayfishes forage on detritus that enters through the open mouth(s) of the cave system. It is presumed that water quality in the cave system is important to their survival. Protection of natural detritus flow and prevention of chemical contamination are often cited as the most important protective measures. Based on observations of divers, the part of the cave systems originating under the National Forests appears to be relatively clean. Water flows originating on private lands apparently are sometimes contaminated by surface water runoff that flows directly into open sink holes.

Insects

Sensitive

***Atrytone arogos arogos*/Arogos skipper (added to sensitive list effective 01/01/2002)**

***Cordulegaster sayi*/Say's Dragonfly**

***Progomphus bellei*/Belle's Sand Clubtail**

***Somatochlora calverti*/Calvert's Emerald**

The **Arogos skipper** occurs in much of the eastern US. It lives in a variety of grassland habitats with local distribution defined by the availability of food plants. The Arogos skipper is known from a sandhills site west of Lake Delancy in the Ocala National Forest, where the larval food plant is lopsided indiagrass (*Sorghastrum secundum*). This is the only xeric sandhill site known to be inhabited by the skipper, which occupies moist grasslands in other areas. The skipper has not been seen at the site for about 5 years. The species has not been confirmed in the Apalachicola or Osceola National Forests, but may occupy sandhills or flatwoods habitats there.

Say's Spiketail Dragonfly is associated with silt-bottomed spring seepages in hardwood forests, with nearby weedy clearings for foraging. It is known from 8 localities in northern Florida and 1 in central Georgia.

Belle's sand clubtail uses two habitat types, sand bottomed lakes and small sandy spring-fed trickles in the open. Their larvae burrow in the sand. Their range is apparently relatively small, including a few counties in the Florida panhandle.

Calvert's emerald, a metallic brown and green dragonfly is known only from the Florida Panhandle and a few specimens taken in South Carolina. Their habitat requirements are unknown. By analogy with similar species, it is assumed that the larvae probably live in boggy seepage trickles in hardwood forests.

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1.7 Monitoring Question: Are we maintaining viable populations of PETS plant species and habitats to support them?

Item to Measure: Locations and numbers of PETS plant populations

Results and Evaluation

Endangered

Harperocallis flava/Harper's Beauty
Polygala lewtonii/Small Lewton's Milkwort
Nolina brittoniana/Britton's Beargrass

Threatened

Eriogonum longifolium var. *gnaphalifolium*/Scrub Buckwheat
Bonamia grandiflora/Florida Bonamia
Clitoria fragrans/Pigeonwings
Macbridea alba/White Birds-in-a-Nest
Scutellaria floridana/Florida skullcap
Pinguicula ionantha/Godfrey's Butterwort

Sensitive

Agalinis divaricata/Pinelands False Foxglove
Agrimonia incisa/Incised Groovebur
Andropogon arctatus/Pine-Woods Bluestem
Angelica dentata/Coastal-Plain Angelica
Aristida mohrii/Mohr's Threeawn
Aristida patula/Tall Threeawn
Aristida rhizomophora/Florida Threeawn
Aristida simplicifolia/Southern Threeawn
Arnoglossum diversifolium/Variable-leaf
Indian-Plantain
Arnoglossum floridanum/Florida Indian-Plantain
Arnoglossum sulcatum Indian-Plantain
Asclepias curtissii/Curtis Milkweed
Asclepias viridula/Southern Milkweed
Aster chapmanii/Chapman's Aster
Aster eryngiifolius/Coyote Thistle Aster
Baptisia simplicifolia/Coastal Plain Wild Indigo
Berlandiera subcaulis/Florida Greeneyes
Boltonia apalachicolaensis/Apalachicola Doll's Daisy
Calamintha ashei/Ashe's Savory
Calamintha dentata/Toothed Savory
Carex baltzellii/Baltzell's Sedge
Carex decomposita/Cypress-knee Sedge
Centrocema arenicola/Sand Butterfly Pea
Cleistes bifaria/Small Spreading Pogonia
Coelorachis tuberculosa/Piedmont Jointgrass
Coreopsis nudata/Georgia Tickseed
Ctenium floridanum/Florida Orange-Grass
Euphorbia discoidalis/Summer Spurge

Forestiera godfreyi/Godfrey's Swamp Privet
Galactia microphylla/No Common Name
Gentiana pennelliana/Wiregrass Gentian
Hartwrightia floridana/Hartwrightia
Hasteola robertiorum/Hammockherb
Hymenocallis henryae/Panhandle Spiderlily
Hypericum chapmanii/A Saint John's-Wort
Hypericum exile/A Saint John's-Wort
Illicium parviflorum/Star-Anise
Justicia crassifolia/Thick-leaved Water Willow
Lachnoculon beyrichianum/Southern Bog Button
Lachnoculon digynum/Pineland Bog Button
Lachnoculon engleri/Engler's Bog Button
Lechea cernua/Nodding Pinweed
Lechea divaricata/Drysand Pinweed
Linum westii/West's Flax
Litsea aestivalis/Pondspice
Lupinus westianus/Gulf Coast Lupine
Lythrum curtissii/Curtiss' Loosestrife
Macranthera flammea/Hummingbird Flower
Magnolia ashei/Ashe's Magnolia
Matelea floridana/Florida milkvine
Matelea pubiflora/Trailing milkvine
Micranthemum glomeratum/Manatee Mudflower
Monotropsis odorata/Sweet Pinesap
Myriophyllum laxum/Piedmont Water-Milfoil
Najas filifolia/Needleleaf Waternymph
Nemastylis floridana/Fall-Flowering Ixia
Nolina atopocarpa/Florida Beargrass
Nyssa ursina/Bog Tupelo

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<i>Oxypolis ternata</i> /Piedmont Cowbane	<i>Scutellaria glabriuscula</i> /Georgia Skullcap
<i>Parnassia caroliniana</i> /Carolina Grass of Parnassus	<i>Sideroxylon alachuense</i> /Silver Buckthorn
<i>Paronychia rugelii</i> /Rugel's Nailwort	<i>Sideroxylon tenax</i> /Tough Bumelia
<i>Persea humilis</i> /Scrub Bay	<i>Silphium simpsonii</i> /Simpson's Rosinweed
<i>Phlox floridana</i> /Florida Phlox	<i>Sisyrinchium xerophyllum</i> /Jeweled Blue-eyed Grass
<i>Phoebanthus tenuifolia</i> /Pineland False Sunflower	<i>Spigelia loganioides</i> /Florida Pinkroot
<i>Physalis arenicola</i> /Cypresshead Groundcherry	<i>Spiranthes longilabris</i> /Giant Spiral Ladies'-tresses
<i>Physalis carpenterii</i> /Carpenter's Groundcherry	<i>Sporobolus curtissii</i> /Pineland Dropseed
<i>Physostegia godfreyi</i> /Apalachicola Dragonhead	<i>Sporobolus floridanus</i> /Florida Dropseed
<i>Pieris phillyreifolia</i> /Climbing Fetterbush	<i>Sorghastrum apalachicolense</i> /Apalachicola Indiangrass
<i>Pinckneya bracteata</i> /Fevertree	<i>Sporobolus floridanus</i> /Florida Dropseed
<i>Pinguicula ionantha</i> /Godfrey's Butterwort	<i>Stachydeoma graveolens</i> /Mock Pennyroyal
<i>Pinguicula planifolia</i> /Chapman's Butterwort	<i>Stylisma abdita</i> /Showy Dawnflower
<i>Pityopsis flexuosa</i> /Bent Golden Aster	<i>Tephrosia mohrii</i> /Pineland Hoary-Pea
<i>Pityopsis oligantha</i> /Coastal-Plain Golden-Aster	<i>Verbesina chapmanii</i> /Chapman's Crownbeard
<i>Plantago sparsiflora</i> /Pineland Plantain	<i>Verbesina heterophylla</i> /Diverseleaf Crownbeard
<i>Platanthera integra</i> /Yellow Fringeless Orchid	<i>Vicia ocalensis</i> /Ocala Vetch
<i>Polygala hookeri</i> /Hooker's Milkwort	<i>Warea sessilifolia</i> /Sessile-Leaved Warea
<i>Polygala leptostachys</i> /Georgia Milkwort	<i>Xyris chapmanii</i> /Chapman's Yellow-eyed Grass
<i>Polygonella macrophylla</i> /Largeleaf Jointweed	<i>Xyris drummondii</i> /Drummond's Yellow-eyed Grass
<i>Pteroglossaspis</i> (= <i>Eulophia</i>) <i>ecristata</i> /Wild Coco	<i>Xyris isoetifolia</i> /Quillwort Yellow-eyed Grass
<i>Pycnanthemum floridanum</i> /Florida Mountainmint	<i>Xyris longisepala</i> /Karst Pond Xyris
<i>Quercus arkansana</i> /Arkansas Oak	<i>Xyris louisianica</i> /Kral's Yellow-eyed Grass
<i>Rhexia parviflora</i> /Small-Flowered Meadow Beauty	<i>Xyris scabrifolia</i> /Harper's Yellow-eyed Grass
<i>Rhexia salicifolia</i> /Panhandle Meadow Beauty	<i>Zephyranthes simpsonii</i> /Redmargin Zephyrlily
<i>Rhododendron austrinum</i> /Orange Azalea	
<i>Rhynchosia michauxii</i> /Michaux's Snoutbean	
<i>Rhynchospora breviseta</i> /Shortbristle Beaksedge	
<i>Rhynchospora crinipes</i> /Hairy-peduncled Beakrush	
<i>Rhynchospora macra</i> /Large Beakrush	
<i>Rhynchospora pleiantha</i> /Coastal Beaksedge	
<i>Rudbeckia graminifolia</i> /Grassleaf Coneflower	
<i>Rudbeckia nitida</i> /Shiny Coneflower	
<i>Ruellia noctifolia</i> /White-Flowered Wild Petunia	
<i>Salix floridana</i> /Florida Willow	
<i>Sarracenia leucophylla</i> /Crimson Pitcherplant	
<i>Schisandra glabra</i> /Bay Starvine	
<i>Schoenocaulon dubium</i> /Florida Feathershank	
<i>Schoenolirion albiflorum</i> /White Sunnybells	
<i>Scutellaria floridana</i> /Florida Skullcap	

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Proposed, Threatened and Endangered (PETS) species which are also Management Indicator Species (MIS), are discussed under Monitoring Question 1.1.

Many of the PETS plants on the National Forests in Florida are rare endemics and have become even more rare due to loss of habitat. Others were once more widely distributed, but have become rare due to loss of habitat. The habitat of most of these species depends upon frequent fire. Habitat loss has resulted from a combination of fire exclusion, mechanical disturbance, and conversion to pine plantations.

Considering the reasons for loss of habitat, one of the most reliable ways to track population viability is by monitoring those activities that affect habitat. Such activities include acres maintained/restored by burning, acres restored by thinning, and acres restored to longleaf, versus acres degraded by mechanical disturbance. These are monitoring items reported elsewhere in this report.

In addition to monitoring habitat, the monitoring of plots established within known populations and field surveys to detect previously unknown and/or new occurrences should provide direct evidence of population viability.

Permanent monitoring plots have been established for seven of the T & E plants known to occur on the National Forests in Florida. A field survey on the Ocala is needed to establish the distribution of *Clitoria fragrans*. To date, only two individuals of *C. fragrans* have been observed on the Ocala.

The Ocala National Forest was surveyed in the early 1990's to establish the distribution of *Bonamia grandiflora*, *Polygala lewtonii*, and *Eriogonum longifolium*. *Clitoria fragrans* and *Nolina brittoniana* were subsequently discovered on the Ocala. The Apalachicola National Forest routinely conducts surveys following fire to determine the distribution of *Harperocallis flava*, *Macbridea alba*, *Pinguicula ionantha*, and *Scutellaria floridana*. In order to make this data more readily available, the Apalachicola National Forest is entering this distribution data on GIS.

Most of the Sensitive plants known or likely to occur on the National Forest in Florida are fire dependant components of wiregrass communities. A few are components of the scrub communities. These species require similar habitat to the T & E plants associated with these respective communities. Therefore, it is reasonable to assume that those activities that maintain or improve habitat for these listed T & E Plants will also serve to provide habitat for those sensitive plants that occupy similar habitat.

A few sensitive plants are associated with canopied wetlands and mesic hardwood forests. These areas are not considered suitable for timber production and are not significantly affected by Forest Service management activities.

The Forest Service is continuing to gather data on the distribution of PETS plants through field surveys associated with management activities. Contracts with the Florida Natural Areas Inventory and the Department of Defense Legacy Program are being finalized under which additional PETS plants surveys will be conducted and additional monitoring plots will be established.

Inventories conducted through field surveys provide good information concerning the distribution of PETS plants on the Forest. Revisiting known occurrences provides qualitative information as to whether these species are persisting. The Forest Service continues to gather data on the distribution of PETS plants through field surveys associated with management activities.

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Years of monitoring are required to establish population trends. Monitoring plots established in 1996 to monitor T & E plants have not been in place long enough to establish population trends. In most cases, three plots were established to monitor each species. Three plots are insufficient to provide reliable trend data.

The monitoring plots established in 1996 were part of a larger ecosystem classification project entered into with the University of Florida. Permanent vegetation monitoring plots were established on all five Ranger Districts. Data was to be taken from these plots on soils and vegetation. Beginning in 1997, 101 Land Type Association (LTA) plots were established on the ANF, 50 on the Apalachicola Ranger District (ARD) and 51 on the Wakulla Ranger District (WRD).

In 2000, those plots with recorded occurrences of MIS plants were identified and the decision was made to use data obtained from these LTA plots to track MIS species trends also. To date, five of the above listed MIS species have been documented on 43 of the 50 plots on the ARD (*Aristida beyrichiana*, *Ctenium aromaticum*, *Sporobolus floridanus*, *Sporobolus junceus* and *Xyris stricta*). Four of the above listed MIS species have been documented on 30 of the 51 plots on the Wakulla District (*Aristida beyrichiana*, *Ctenium aromaticum*, *Sporobolus floridanus*, and *Sporobolus junceus*). Meaningful trend information is not yet available since these plots have been sampled only once. In addition to these LTA plots, twelve plots (three per species) were established for the federally listed MIS plants *Harperocallis flava*, *Macbridea alba*, *Pinguicula ionantha*, and *Scutellaria floridana*. Initial data has been collected from all of these plots and they have been revisited anywhere from 2-5 times each. Trend data is not available as of yet. Baseline data for all MIS species can be found in the *2001 Annual Monitoring and Evaluation Report for the National Forests in Florida*.

The LTA plots were intentionally placed on sites selected because they were thought to closely represent the potential natural vegetation of their respective communities. In order to track the success of efforts to improve or restore the natural native communities on degraded sites, plans are to establish similar monitoring plots on pine plantations and other degraded sites.

A long-term vacancy of the Forest Botanist position has resulted in limited collection of plot data for FY 2006. It has long been acknowledged that due to plant responses to climate, burning and other factors, that traditional plot data has limited effectiveness in identifying trends in the health of many plant species. The Forest Service is working with the Florida Natural Areas Inventory to update the monitoring methods for plant species.

Forest Plan Goal:

- Apply prescribed burning technology as a primary tool for restoring fire's historic role in ecosystems.

Forest Plan Objective:

- Prescribe burn on average every 3 years with varied intervals on any given site to restore natural processes in all sites where the natural-fire-return interval was less than 10 years. Strive to burn 50 percent of those acres between March 15 and September 30 and 20 percent between May 1 and July 31. This includes wilderness, wilderness study areas, and the Savannah research natural area.

1.8 Monitoring Questions: What is the burning interval of upland pine acres? In what months have upland pine been burned?

Items to Measure: Acres of upland pine burned. Acres burned by month.

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Results: Total Acres burned on the National Forests in Florida in the last 3 years are shown in Table 37.

**Table 37.
Acres Burned**

Year	Acres
2004	144,267
2005	139,344
2006	107,163
Total	390,774

Based on the upland pine Management Area 7.1 of 507,740 acres, 77% longleaf type was burned in the last 3 years.

Table 38 provides the breakdown of acres burned by month in FY2006.

**Table 38.
Upland Pine Percent Burned by Month
FY 2006**

Month	Percent
October	0
November	0
December	13.8
January	28.9
February	28.2
March	0.7
April	0
May	2.4
June	11.3
July	12.8
August	1.9
September	0
Total	100

Evaluation: An average of 150,000 acres every 3 years should be burned to maintain the upland pines. The Forest should strive to burn 50% of those acres (75,000 acres) between March 15 and September 30, and 20% (30,000 acres) between May 1 and July 31.

FY 2006 saw a below average year for prescribed fire accomplishments. This can primarily be attributed to lack of rainfall and drought conditions for the months of April, May, June and July. The above criteria were not met with the exception of 20% between May 1 and July 31. The Forest burned 28.4% (30,373 acres) of total acres in the period from March to September. From May 1 to July 31, 26.5% (28,373 acres) of total acres was burned. Average yearly acres (2004-2006) were 130,258.

Forest Plan Standards and Guidelines for Fire are found on pages 3-3 through 3-4 of the Forest Plan and include standards **FI-1** through **FI-14**.

1.9 Monitoring Question: How many miles of firelines were plowed for prescribed fire and wildfires? How many miles were restored?

Item to Measure: Miles of plowed firelines for each purpose. Miles of plowed firelines restored.

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Results: A total of 83 miles of re-worked (plowed,bladed,disked) prescribed fire firelines were installed during FY2006. Wildfire generated 27.6 miles of firelines.

During FY2006, 27.4 miles of plowed fireline was restored.

Alternative Firelines (swamp, foam, water, existing roads, disked lines): Alternative firelines utilized for prescribed fire totaled 737 miles. Alternative firelines utilized for wildfires totaled 8.7 miles.

Evaluation:

FY 2006 saw an increase from last year in the number of miles of fireline plowed, but not reaching the levels of FY 2003-2004. The average number of miles of fireline restored over the past 7 years is 43, and FY 2006 was below the average, at 27 miles. The use of alternative fireline was maximized at 737 miles.

Table 39.
Number of miles of fireline plowed and miles restored.

Year	Miles Plowed	Miles Restored
2000	210	85
2001	48	44
2002	48	29
2003	222	8
2004	275	107
2005	87	1
2006	111	27

Forest Plan Objective:

- Prescribe burn on average every 3 years with varied intervals on any given site to restore natural processes in all sites where the natural-fire-return interval was less than 10 years. Strive to burn 50 percent of those acres between March 15 and September 30 and 20 percent between May 1 and July 31. This includes wilderness, wilderness study areas, and the Savannah research natural area.

Based on the upland pine Management Area 7.1 acres of 507,740, 77% of this type was burned in the last 3 years (2004,2005, 2006). However, in FY 2006, 107,163 acres were burned; 72 percent of these acres were burned in the winter months, 28 percent of these acres were burned between March 15 and September 30, and 26% of acres were burned between May 1 and July 31. The Forest did not achieve this objective for FY 2006 due to lack of significant rainfall during the growing season (April – July).

Forest Plan Standards and Guideline FI-7—Minimize the use of plowed firelines for prescribed burns. Favor the use of alternatives such as disked firelines, foam, water, existing roads, or natural barriers.

A total of 83 miles of re-worked firelines were installed during FY2006. Wildfire generated 27.6 miles of plowed firelines. Alternative firelines utilized for prescribed fire totaled 737. In FY 2006 the Forest did minimize the use of plowed firelines and also optimized the use of alternative firelines to the extent possible. Minimization of firelines during times of drought is more difficult due to changes in suppression tactics.

Forest Plan Objective:

- Restore between 10,000 and 15,000 acres of off-site slash pine to the appropriate native vegetation in the next 10 years. Remove slash pine from 8,000 acres of mixed longleaf/slash pine stands on the Osceola NF. The long-term objective is to restore all the off-site slash pine to the appropriate native vegetation.

1.10 Monitoring Question: How much off-site slash pine has been restored to other types?

Item to Measure: Acres type-converted from slash pine to other spp.

Results: 2,263 acres have been restored to longleaf pine from off-site slash pine through the end of FY 2006. No slash pine was removed from mixed stands on the Osceola in FY 2006.

Evaluation: Responding to wildfire and hurricane efforts as well as meeting other forest priorities such as motorized route designations with decreasing budgets, have limited our ability to meet this objective. Treatment of these areas needs to be emphasized in the 5-year vegetation management plan to be developed in 2008 on the Osceola National Forest.

1.11 Monitoring Question: Are we collecting data on understory structure?

Item to Measure: CISC report data on understory field

Results: The CISC database has been replaced by the FSveg database, which should allow for collection and storage of more detailed understory vegetation information. The purpose of this monitoring item was to ensure that data is collected in order to provide information for the next Plan revision. Basic data is collected when possible during stand exams and entered in FSveg.

Evaluation: Recommend this monitoring question be clarified or removed from the monitoring report.

Forest Plan Objective:

- Thin 45,000 to 55,000 acres of longleaf and slash pine stands to release overcrowded live crowns, favor appropriate pine species for regeneration, increase stand growth, allow more sunlight onto the forest floor, and increase suitable habitat for red-cockaded woodpeckers (RCWs).

1.12 Monitoring Question: How many acres have been offered for thinning?

Item to Measure: Number acres thinning harvest offered

Results: Through FY 2006, 11,531 acres were offered for thinning purposes.

Evaluation: Responding to wildfire and hurricane efforts as well as meeting other forest priorities such as motorized route designations, have limited our ability to meet this objective. Treatment of these areas needs to be emphasized in the 5-year vegetation management plan to be developed in 2008.

Forest Plan Objective:

- Replace between 500 and 1,000 acres of the off-site sand pine to the appropriate native vegetation in the next 10 years. The long-term objective is to restore the off-site sand pine to the appropriate native vegetation.

1.13 Monitoring Question: How much off-site sand pine has been restored, and to what other types?

Item to Measure: Acres type-converted from off-site sand pine to other species

Results: A total of 774 acres of off-site sand pine have been restored to longleaf pine through FY 2006.

Evaluation: The results from the first six years of plan implementation indicate that the objective for the plan period will be met.

Forest Plan Objective:

- Initiate uneven-aged management with group selection harvests on 30,000 to 33,000 acres principally in longleaf pine forests with some in slash pine forests.

1.14 Monitoring Questions: On how many acres have we initiated uneven-aged management harvest? Is the group selection method producing the anticipated desired conditions in the longleaf pine ecosystem and what are the effects of group selection harvest in longleaf pine?

Items to Measure: Number acres offered with uneven-aged harvest. Tree stem diameter and frequency, frequency of seed crops, longleaf pine regeneration establishment and survival, growth, and development of seedlings, pine midstory development and distribution, costs and returns of implementation of harvesting, costs and effects of burning within harvest units, plant species frequency and distribution, PETS species population trends/habitat conditions, MIS plant/animal population trends/habitat conditions.

Results: Through FY 2006, 2,493 acres have been offered with uneven-aged management harvest methods. An evaluation of the effects of this harvest method is to be reported in five-year intervals. There were not any studies initiated in FY 2006; however, the requirements for this are known and recognized. Areas that may be suitable for this work are being surveyed, examined, and assessed for inclusion in future years work scheduling.

Evaluation: In order to meet the objectives of the Forest Plan, efforts should be made to increase the acreage offered for uneven-aged harvest. More detail can be found concerning the effects of group selection under Research Needs in part III of this report.

Forest Plan Objective:

- Initiate irregular shelterwood harvests on between 1,800 and 2,000 acres of slash pine forests.

1.15 Monitoring Question: How many acres have we initiated irregular shelterwood harvest? Is the irregular shelterwood method producing the anticipated desired conditions in the slash pine forest?

Items to Measure: Number acres offered with irregular shelterwood harvests. Growth and development of seedlings, costs and returns of implementation of harvesting, costs and effects of burning within harvest units, plant species frequency and distribution, PETS species effects/population trends.

Results: There were no acres of irregular shelterwood offered for harvest for FY 2006. An evaluation of the effects of this harvest method is to be reported in five-year intervals. There were no studies initiated in FY 2006.

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Evaluation: This objective may no longer be applicable as a forest objective.

Forest Plan Objective:

- Regenerate between 39,000 and 41,000 acres of sand pine on the Ocala NF.

1.16 Monitoring Question: How many acres of sand pine have had a regeneration harvest?

Item to Measure: Number acres offered with sand pine regeneration harvest

Results: There were 18,746 acres of sand pine committed to regeneration harvest through the end of FY 2006. 2,645 acres of sand pine were offered for regeneration harvest in FY 2006.

Evaluation: Responding to wildfire and hurricane efforts as well as meeting other forest priorities such as motorized route designations, have limited our ability to meet this objective. Treatment of these areas needs to be emphasized in the 5-year vegetation management plan to be developed.

Forest Plan Standards and Guidelines for size and distribution of sand pine openings are found on pages 4-45, 4-47, & 4-48 and includes standards and guidelines **8.1-3, 8.2-3 and 8.4-3.**

1.17 Monitoring Question: What is the size and distribution of openings in sand pine?

Item to Measure: Size of opening

Results: The average size of sand pine openings created by timber harvest from 2000-2006 is 57 acres. The average size of openings created by timber harvest in 2006 was 71 acres. Since FY 2000, there have been 37 openings created greater than 100 acres. In 2006, there were 7 openings created greater than 100 acres by timber harvest.

Evaluation: The Forest Plan desired condition of sand pine scrub openings is to have large openings up to 160 acres in most of the forest and up to 320 acres in portions of the forest. While some large openings have been created, the average size of acres committed to regeneration in FY 2006 is smaller than desired. The purpose of increasing the size of opening is to maximize scrub-jay occupancy. Figure 14 shows the distribution of scrub-jay habitat on the Ocala National Forest.

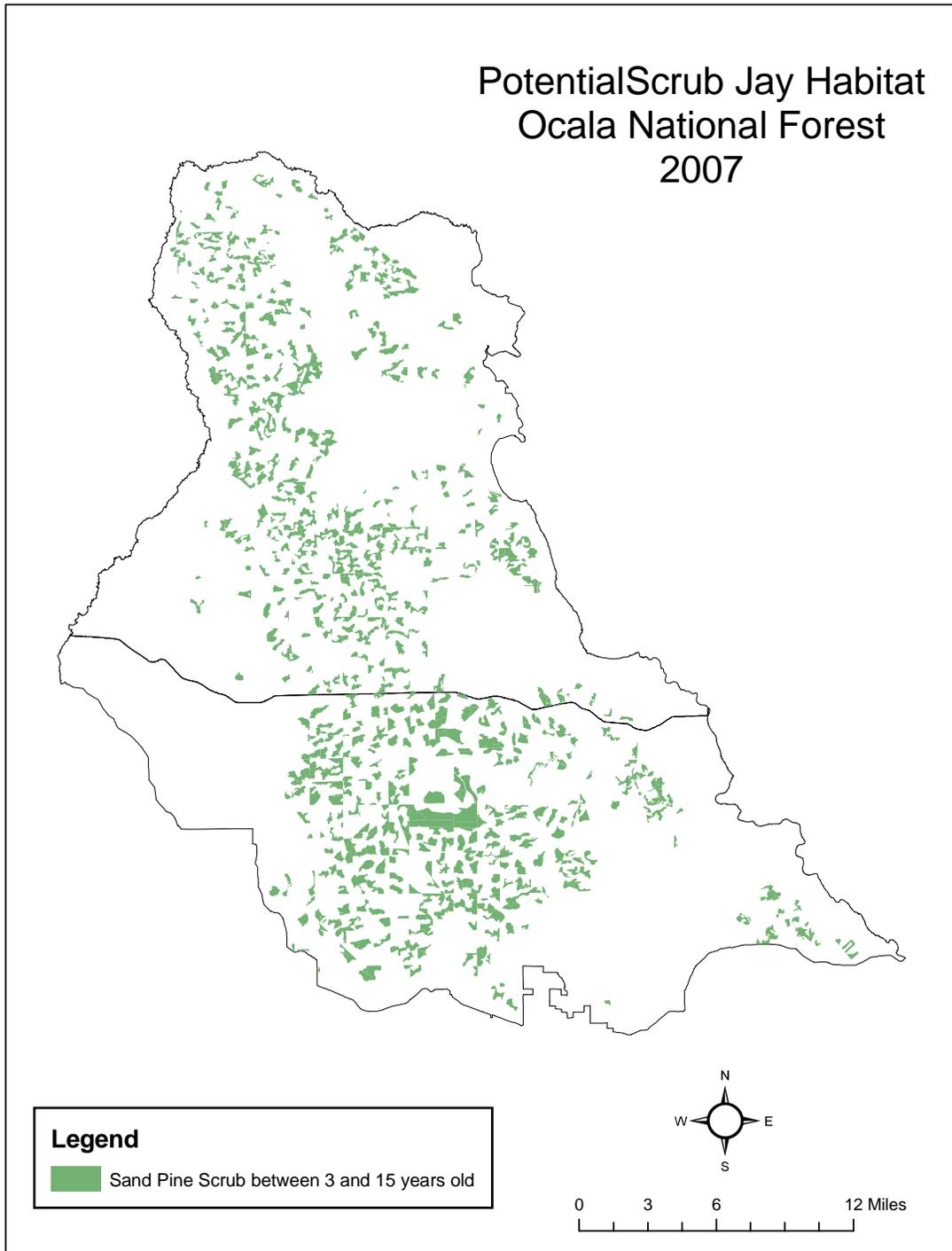


Figure 14. Potential scrub jay habitat on the Ocala National Forest, 2007.

Forest Plan Objective:

- Designate the following acres of future old growth by community type (Table 40):

**Table 40.
Old-Growth Community Objectives**

Old-Growth Community	Acres
Upland Longleaf Pine Forest	10,200
Southern Wet Pine Forest, Woodland, and Savannah	11,000
Cypress/Tupelo Swamp Forest	17,700
River Floodplain Hardwood Forest	2,900
Hardwood Wetland Forest	24,200
Dry and Dry Mesic Oak/Pine Forest	2,200
Coastal Plain Upland Mesic Hardwood Forest	1,700
Dry and Xeric Oak Forest, Woodland, and Savannah	2,100
Total	72,000

1.18 Monitoring Question: Have old-growth stands been designated in each community type?

Item to Measure: Acres of old growth by community type designated in CISC

Results: Old growth has only been designated on the Apalachicola NF and Table 41 below shows the acres of each community designated.

Table 41. Old-Growth Designations

Old-Growth Community	Apalachicola NF
Upland Longleaf Pine Forest	6,836
Southern Wet Pine Forest, Woodland, and Savannah	9,944
Cypress/Tupelo Swamp Forest	6,120
River Floodplain Hardwood Forest	1,548
Hardwood Wetland Forest	8,423
Dry and Dry Mesic Oak/Pine Forest	1,686
Coastal Plain Upland Mesic Hardwood Forest	315
Dry and Xeric Oak Forest, Woodland, and Savannah	410
Total	35,282

Evaluation: Old growth should be designated on the Ocala and Osceola NF. A review of acres available suitable for old growth designation on the Osceola and Ocala NF in management areas where there is no scheduled timber harvest to provide for sustained yield timber production are listed below by community type in Table 42. This shows the potential for old growth in these management areas as an example.

Table 42. Acres available for old growth designation in management areas classed as unsuitable for timber production on the Osceola and Ocala NF

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Old-Growth Community	Osceola	Ocala	Total
Upland Longleaf Pine Forest	932	1,175	2,107
Southern Wet Pine Forest, Woodland, and Savannah	1,490	9,171	10,661
Cypress/Tupelo Swamp Forest	9,469	848	10,317
River Floodplain Hardwood Forest	269	841	1,110
Hardwood Wetland Forest	2,056	11,163	13,219
Dry and Dry Mesic Oak/Pine Forest	0	32	32
Coastal Plain Upland Mesic Hardwood Forest	0	354	354
Dry and Xeric Oak Forest, Woodland, and Savanna	0	1,308	1,308
Total	14,216	24,892	39,108

Forest Plan Goals:

- Obtain a national forest ownership pattern that reduces management costs and helps meet ecosystem management objectives. Acquire land to connect large tracts of public ownership to maintain biologic and hydrologic linkages in partnerships with other public agencies. Locate and maintain national forest boundaries that are visible to forest users and neighbors.

Forest Plan Objectives:

- Evaluate Choctawhatchee lands that no longer exhibit national forest character and consider for exchange for lands adjacent to or within the Apalachicola, Ocala, and Osceola National Forests. Exchange national forest land along the Ocklawaha River for State-owned land within national forest boundaries. Exchange Forest Service-owned minerals under Withlatchoochee and Blackwater State Forests for land within Pinhook purchase unit.
- Acquire land within the 170,600-acre Pinhook purchase unit. Within the Apalachicola, Ocala, and Osceola National Forests, annually acquire a minimum of 200 acres of forest inholdings. Acquire 6,500 acres adjacent to the Ocala NF.

1.19 Monitoring Question: Have land purchases and exchanges met the objectives established in the Forest Plan?

Item to Measure: Itemized by map what has been gained and what has been exchanged; miles of landlines maintained

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Results: There were 41.75 miles of boundary lines marked/maintained of National Forest System lands in Florida in FY 2006. Due to limited funding and staffing, it was not feasible to mark and post all newly acquired properties.

In FY 2006, the National Forests in Florida acquired a total of 3,915 acres through completion of fifteen land adjustment cases.

Evaluation: The Forest lacks the funding and experienced staff to sufficiently mark/maintain our existing boundary lines and boundary lines associated with new acquisitions.

These newly acquired lands, particularly those pertaining to the Florida National Scenic Trail, will need to be addressed within the Forest Plan. Constraints on acquisition funding continue to impede our ability to fully meet our potential and expectations within the program.

Forest Plan Standards and Guidelines for soil and water are found on pages 3-24 through 3-25 of the Forest Plan and include standards and guidelines **WA-1** through **WA-7**.

1.20 Monitoring Questions: Are aquatic and terrestrial ecosystems being impaired by acid deposition? Is water quality being maintained?

Items to Measure: Change in water chemistry regarding acid neutralization. Fecal coliform – swim sites; drinking water – recreation areas and administrative sites; chemistry – State well sites

Results: Fecal coliform samples are collected at all developed swim sites during the summer swimming season on all three national forests. No swim sites monitored in 2005 reported having problems meeting state standards for fecal coliform on either the Ocala or Osceola NF. The only developed swim site on the Osceola NF is Ocean Pond. Developed swimming areas on the Ocala NF are: Mill Dam Lake, Fore Lake, Juniper Springs, Silver Glen Springs, Salt Springs, Alexander Springs, Clearwater Lake, Farles Prairie, Buck Lake, Wild Cat Lake, Lake Dorr, and Doe Lake. The only developed swim site on the Osceola NF is Ocean Pond.

On the Apalachicola NF Lost Lake, due to the small size of the lake and a tendency to fail the test for fecal coliform during the warm summer months, is closed to swimming and is not expected to be maintained as a swimming site anytime in the future. The only developed swim sites on the Apalachicola NF are Silver Lake, Camel Lake, and Wright Lake. Data was unavailable for these sites in FY 2006.

Data on drinking water samples from recreation areas and administrative sites was not available for FY 2006. Although nitrate levels are rising in many areas across the state, potable waters tested on the National Forests in Florida historically continue to be below a level of concern. This is likely due to a lack of development within aquifer recharge areas for Forest springs and ground waters. Nitrate levels for ground waters across the three forests are determined from water sampling at both potable well sites and state ambient ground water monitoring sites. The Florida State standard for nitrate in potable waters is 10 mg/l N.

Many springs systems in Florida have recently experienced an increase in the amount of algae present in both the boils and spring runs. Although algae are normally found in these systems, the amount present has been increasing and is an issue of concern for many. Florida Department of Environmental Protection in cooperation with Michigan State University has begun a study of the springs in Florida to determine: 1.) nutrient and algal conditions, 2.) the relationships between nutrients and algae; and 3.) monitoring and management tools to protect and restore the springs. Preliminary results were reported in 2004; however, no solutions to the continuing presence of algae in many of the springs were presented. A follow-up sampling of many Florida springs was also conducted in the winter of 2005 – 2006. Final results of this study are expected to be available in 2007.

Evaluation: Water quality at swim sites appears to be improving, possibly as a result of a return to more normal lake levels following increases in precipitation patterns along with the increase in recent hurricane activity. However, swim site failures have historically been attributed to contamination by swimmers, especially during times when waters are warm, lake levels are low or when large numbers of swimmers are present.

Forest Plan Standards and Guidelines for air quality are found on page 3-25 of the Forest Plan and include standards and guidelines **WA-8** and **WA-9**.

1.21 Monitoring Question: Is air quality being maintained?

Item to Measure: Particulates, Ozone

Results: Air quality information for all monitoring sites on or near the Forest has been updated. Ozone and fine particulate (PM_{2.5}) levels continue to remain below the national ambient air quality standards (NAAQS); including the new 24-hour fine particulate standard that was reduced from 65 to 35 micrograms per cubic meter (ug/m³) in September 2006.

Ambient Air monitoring Information: The two criteria pollutants of most interest to Forest managers are ozone and fine particulate matter. The Florida Department of Environmental Protection (FDEP) operates a network of air quality monitors state-wide, both for fine particulate matter (PM_{2.5}) and ozone. Air quality monitoring for particulate matter includes both fine and coarse particulates, although from a human health stand-point, fine particulates are of the most concern.

The state-wide monitoring network is not distributed uniformly across the State and most monitors are concentrated near urban areas. However the Forest operates one ozone monitor at the Osceola Work Center, and two particulate monitors located at the Wakulla and Ocala Work Centers in cooperation with the FDEP, Division of Air Resource Management. Acid deposition is also monitored by EPA at a site on the Apalachicola National Forest. And the US Fish and Wildlife Service operates an ozone monitor and an aerosol monitor (as part of the national visibility monitoring network, IMPROVE) at nearby St. Marks National Wildlife Refuge. Data collected by IMPROVE provides information on the constituents of particulates in the atmosphere, as well as a measure of visibility.

National Ambient Air Quality Standards (NAAQS): There are NAAQS for six air pollutants, but in the eastern US, ozone and fine particulate cause the most concern. Each state maintains a monitoring network designed to track attainment of the ozone and fine particulate standards. Currently there are no nonattainment areas in Florida.

Fine Particulate Matter: Fine particulate matter is defined as airborne particles with diameters less than or equal to 2.5 microns, hence the acronym PM_{2.5}. These very small particles remain suspended in the air much longer (on average) than coarse (PM₁₀) particles and behave more like a regional pollutant such as ozone. Examination of 2003 aerosol monitoring data from St. Marks National Wildlife Refuge, located very near the Apalachicola National Forest and Bradwell Bay Wilderness, shows that ammonium sulfate and organic carbon account for about 85% of the fine particulate mass.

Data source: <http://vista.cira.colostate.edu/views/Web/AnnualSummary/Composition.aspx>

The PM_{2.5} particulate standard has two parts; the 24-hour or daily standard and the annual standard. In September 2006 EPA reduced the 24-hour standard from 65 to 35 ug/m³, making it more stringent. The annual standard did not change. In order to attain these standards monitoring data must show that:

1. the 98th percentile of the distribution of the 24-hour concentrations for a period of 1 year, averaged over 3 years, does not exceed 35 ug/m³ and
2. the three-year average of the annual arithmetic mean of the 24-hour concentrations does not exceed 15 ug/m³.

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Monitoring results from sites near the Forest for 2004-2006 show that annual average fine particulate concentrations are not changing. Short term (24-hour) concentrations decreased slightly from the previous years and do not appear in danger of exceeding the new 24-hour fine particulate standard.

Ozone: In addition to the ozone monitor operated by the FDEP and located at the Osceola Work Center in Baker County, another ozone monitor is located near Sumatra on the Apalachicola National Forest. The Sumatra monitor is part of EPA's Clean Air Status and Trends Network (CASTNET). The purpose of this network is to assess the effectiveness of emission control strategies implemented nationwide. Ozone data from the Sumatra site is not used for determining attainment, but the results from the most recent year of available data (2005) are similar to other ozone monitors in the area. All monitors located on, or near, the Forest show compliance with the ozone NAAQS.

Acid Deposition: CASTNET operates two sites in Florida that measure dry deposition of sulfur and nitrogen. One site is located on the Apalachicola National Forest near Sumatra. Wet deposition is also measured at the same site by the National Atmospheric Deposition Program (NADP). Co-location of CASTNET and NADP sites allows these programs to estimate ratios of wet/dry deposition and wet/total deposition (<http://www.epa.gov/castnet/>). There are no additional data summaries for these sites since the 2005 Monitoring and Evaluation Report, so the following information has not changed. Dry deposition currently accounts for about 18 percent of total sulfur and 23 percent of total nitrogen deposition near the Forest. A review of the available NADP data (1991 to 2004 from the Sumatra site) indicates that total sulfur deposition has fluctuated from a high of 7.8 kilograms/hectare/year (kg/ha/yr) to the current level of 4.3 kg/ha/yr. Nitrogen deposition has decreased from a high of 5.6 kg/ha/yr to 3.8 kg/ha/yr currently. It is believed that acid deposition rates are decreasing due to the final implementation of pollution controls by electric generation utilities, as required by the 1990 Clean Air Act Amendments Title IV (Acid Rain) program.

Mercury Deposition: The mercury deposition monitoring site closest to the Forests is located on the Chassahowitzka National Wildlife Refuge. Data from the site showed an increase in mercury deposition in 2005 (21.7ug/m²) over the previous year (17.7 ug/ m² in 2004) which fits the overall increasing trend since monitoring began in 1998. Florida continues to record some of the highest mercury deposition in the country, and has a statewide freshwater fish consumption advisory in effect.

Evaluation: Air quality in the vicinity of the Forests remains within National and State standards, but mercury deposition appears to be increasing.

Forest Plan Standards and Guidelines for fishery resources are found on pages 3-31 through 3-32 of the Forest Plan and include standard and guideline **WL-21**.

1.22 Monitoring Question: Which water bodies were fertilized?

Item to Measure: Report which water bodies were fertilized

Results: Under the Forest Plan only manmade water bodies (excavated ponds) will be fertilized for fishery enhancement. Excavated ponds are managed for fisheries on the Apalachicola and Osceola National Forests. Following a break in the prolonged drought, water levels increased significantly in most of Florida manmade and natural water bodies. Fertilization was reinitiated on eight designated excavated ponds on the Apalachicola NF once normal water levels were attained. Ponds were fertilized on a monthly schedule during the largemouth bass growing season.

Forest Plan Standards and Guidelines for tree regeneration and site preparation are found on pages 3-20 of the Forest Plan and include standards and guidelines **VG-17** through **VG-19**.

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1.23 Monitoring Question: Has soil disturbance been minimized in preparing longleaf and slash pine sites for tree regeneration?

Item to Measure: Percent of the area treated with soil displacement

Results : 1093 acres were roller drum chopped on the Osceola National Forest in FY 2006. These were predominantly acres of burned over land received from the land exchange with the State of Florida. Estimated soil displacement was estimated at less than 10%. 295 acres were roller chopped on the Apalachicola National Forest in FY 2006. Estimated soil displacement was less than 10%.

Evaluation: A series of photo points were established in the Cowhouse Reforestation Project to evaluate the effects of roller drum chopping on soil disturbance. Single pass roller drum chopping in palmetto-gallberry understory types for site preparation appears to result in minimum soil disturbance. The following sets of photos show the progression of the treated sites over time. It is recommended that methodology be reviewed and updated for this monitoring question.



Chopper used on the Cowhouse project, Apalachicola National Forest



Area prior to chopping



Area after chopping

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Area after green-up



Area after prescribed burn



Area after planting



Area 10 months after chopping and
8 months after prescribed burning

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Area before chopping



Area after chopping



Area after green-up



Area after prescribed burning



Area after planting



Area 10 months after chopping and
8 months after prescribed burning

Forest Plan Standards and Guidelines for Range are found on pages 3-14 and 4-41 of the Forest Plan and include standards and guidelines **RA-1** and **7.2-1** through **7.2-5**.

1.24 Monitoring Question: What are the effects of cattle grazing on vegetation?

Item to Measure: Biotic index along a transect, include a transect across fence lines

Results: During FY06 one of the allotments on the Apalachicola NF remained active, with a density of well under one cow per 50 acres. The other remaining allotment, Briar Patch, is inactive. All other allotments, including the one on the Osceola NF, have been officially closed.

Evaluation: Field observations indicate the low density of cows on the Apalachicola allotment does not significantly alter the vegetative composition of the range allotment, and past monitoring has indicated that cattle do not graze on the T&E plants. Feeding and watering structures are positioned in areas where T&E plants do not occur. Regular prescribed burning continues on active allotments, with a continued trend of high quality T&E plant species habitat.

Sustainable Multiple Forest and Range Benefits

Forest Plan Goal:

- Provide a wide range of accessible recreation opportunities to accommodate the varied ability levels of forest visitors.

Forest Plan Objective:

- Make at least 20 percent of the developed site (level 3 and above) recreation opportunities universally accessible. Provide fully accessible opportunities on at least one swimming area, one hiking trail, and one fishing pier/boating site per forest. The long-term objective is to make all developed sites universally accessible.

2.1 Monitoring Question: What percent of each type of recreation site (at least 1 swimming, 1 hiking, 1 fishing) is accessible? (Level 3 and above)

Item to Measure: Percent of accessible by type of recreation site

Results: Table 43 shows the percent of areas meeting ADA standards. There are 35 developed sites level 3 and above, and one level 2 boat ramp/fishing pier, where this objective applies. This table shows the sites that meet some level of accessibility standards.

Table 43. Recreation Sites Meeting ADA Standards.

Percent of Recreation Sites Meeting ADA Standards	
Location	Recreation Site
Apalachicola National Forest	Leon Sinks Trail Head – 100% (hiking trail – 20%)
	Silver Lake Day Use (picnic and swim) – 75%
	Wright Lake Campground – 50%
	Hickory Landing Campground – 25%
	Whitehead Landing Campground – 25%
	Fort Gadsden Historic Site – 25%
	Mack Landing Campground – 25%
	Camel Lake Campground – 0%
Ocala National Forest	Juniper Springs Recreation Area – 35%
	Salt Springs Recreation Area – 75%

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	Silver Glen Springs Day Use – 25%
	Fore Lake Recreation Area – 25%
	Mill Dam Day Use (picnic and swim) – 25%
	Alexander Springs Recreation Area – 25%
	Doe Lake Group Camp – 50%
	Lake Dorr Cabin – 100%
	Wildcat Lake Day Use – 25%
	Lake Delancy East Campground– 25%
	Lake Delancy West Campground – 35%
	Buck Lake Campground – 25%
	Hopkins Prairie Campground – 25%
	Juniper Wayside Day-use – 50%
	Lake Dorr South Boat ramp and Fishing Pier – 75%
	Clearwater Lake Campground –0%
	Big Scrub Campground – 10%
	Big Bass Campground –0%
	River Forest Group Campground –0%
	Lake Shore Group Camp –0%
	Sweetwater Cabin –0%
	Lake Eaton Campground –25%
	Lake Dorr Campground –0%
Osceola National Forest	Olustee Beach Day Use (picnic and swim) – 75%
	Ocean Pond Campground – 75%
	Olustee Depot VIC – 100%
	The Landing Group Camp – 75%
	Olustee Battlefield – Niswander Hiking Trail – 100%

Evaluation: Seven of the 35 developed campgrounds do not meet this objective. Efforts are underway to achieve 20% accessibility at all level three sites. With five years of the Forest Plan completed, it is anticipated that the forest will be able to achieve this objective within the next six years.

Forest Plan Goal:

- Provide safe and enjoyable visitor opportunities at developed recreation areas by maintaining, retrofitting, or replacing recreation facilities or upgrading amenities.

Forest Plan Objective:

- Upgrade, refurbish, or replace four recreation facilities per year.

2.2 Monitoring Question: Are developed recreation facilities providing Meaningful Measures (MM) standard for safety, cleanliness, and service? Do they reflect quality and customer service?

Item to Measure: Evaluations of each facility component are define by MM standards and customer survey forms

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Results: MM also describes standards to provide a desired quality experience and customer service. Areas that were being reconstructed in FY 2007, and will meet all applicable MM quality standards when completed are Shanty Pond Campground on the Ocala NF and several OHV trailheads on the Apalachicola and Ocala National Forests. Recreation areas managed by the Ocala Recreation Complex special use permit (concessionaire) are expected to meet all applicable MM standards for quality of experience and customer service.

During FY 2006, Fee Demo revenues have been used to repair, replace and augment facilities, especially to construct new accessible host sites, accessible parking spaces and replace many old and unused bulletin boards. Fee Demo was used at numerous recreation areas day use areas to enhance the quality of experience and customer service provided. The second round (5-year cycle) of facility condition inspections of developed recreation areas were completed in FY 2006 on the Lake George District. In the year 2007, the Seminole District facility conditions were completed. The Osceola District is expected to be completed in 2008.

Evaluation: In general, the lower level (amenity level 2 and below) areas attain approximately 50% to 75% of applicable Meaningful Measures standards for quality experience and customer service, whereas areas at level 3 or higher attain from 75% to 100% of these standards. Recommended actions include removal from the Fee Demo program of some areas showing very low use, and either closure of these areas or curtailment of services and/or facilities.

Forest Plan Goal:

- Provide a system of marked recreational trails and support facilities that will promote a variety of experiences for both motorized and nonmotorized trail users.

2.3 Monitoring Question: What system of trails has been designated on the ground, and are they maintained at appropriate level?

Item to Measure: Miles of trails, by type and condition

Results: The following table displays the trail system for the National Forests in Florida by mileage and type. Inspections on the Apalachicola NF, Ocala NF, and the Osceola NF have confirmed that all trails are being maintained at the 75% to 100% level of all applicable MM standards for quality of experience and customer service.

Table 44. Miles of Trail by Type

Forest	Type of Trail	Mileage
Apalachicola	Hiking	134*
	Horse Trail	29
	Off-Road Bicycle	10
Ocala	Hiking	80*
	Horse Trail	134
	Off-Road Bicycle	22
	Mixed-use Roads for Unlicensed motorized OHVs	86
	OHV Trails <65"	42
	Motorcycle Trails	13
Osceola	Hiking	26*
	Horse Trail	53

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Forest	Type of Trail	Mileage
	Mixed-use Roads for Unlicensed motorized OHVs	124

*includes 36.5 miles of hiking trails in wilderness.

Evaluation: Recommended actions are to relocate some trails out of wet and eroding areas and off of roads also used by motorized vehicles, and also to construct additional footbridges and boardwalks on selected trail segments, for greater degree of attainment of MM standards.

Forest Plan Objective:

- Establish and certify for public use the remaining 546 miles of Florida National Scenic Trail needed to complete a continuous trail from Big Cypress National Preserve to Gulf Islands National Seashore.

2.4 Monitoring Question: How many miles of Florida National Scenic Trail have been certified for public use?

Item to Measure: Number of miles of Florida National Scenic Trail certified

Results: Approximately 881 miles (63 percent) of the planned 1,400-mile long trail have been certified and opened for public use as FNST. In addition to the continuous FNST, 239 miles of officially certified side, connector and alternate trail routes are also open to the public. Certification agreements are currently being negotiated with twelve agencies/owners that would add over 205 miles to the FNST. The remaining 314 miles requires acquisition to secure a route for public use.

In 2006, the Florida Trail Association’s volunteer trail crews constructed or reconstructed 40 miles of FNST, planned and laid out 25 miles of new trail, built 20 bridges, 3,000 feet of boardwalk, and three trailheads. An additional 120 volunteers and staff were certified to USDA Forest Service standards for safe chainsaw or crosscut operation, use of rigging, and maintenance of hand tools. FTA inventoried and assessed 93 miles of trail and continued to manage the FNST geographic information system. FTA provided the public with current information about the trail and how to get involved via its updated website, hiking guide maps, publications and outreach to the media.

The Florida Trail Association and the National Forests in Florida manage the FNST through a partnership agreement that will total approximately \$490,000 in FY07 (the Florida Trail Association is committed to provide over \$500,000 in-kind and cash match). Federal funds also leverage tens of thousands of dollars of contributions from partner agencies through whose land the FNST passes. Through this agreement, the Florida Trail Association works with the National Forests in Florida and dozens of land managers and owners along the trail in certifying trail segments for public use.

In 2006, eight tracts protecting 11.3 miles (2,330 acres) of new FNST were acquired. These acquisitions filled gaps making it possible to build another 6 miles of FNST on adjoining state land. Less than one percent of land acquisition funding appropriated for the FNST, less than \$200,000, is available. Complementing but replacing the need for Federal funding, in 2006, the State of Florida made protecting the FNST a priority by preliminarily approving the FNST as an eligible acquisition project for funding through the nationally recognized Florida Forever Conservation Lands program, including targeting 69.2 acres for the trail.

Evaluation: Progress on certifying the trail is proceeding well within the projected amount needed to accomplish the objective. The challenge cost share agreement between the National Forests in Florida and the Florida Trail Association should be continued in order to place emphasis on building trail, certifying sections, and acquiring land for the trail.

Forest Plan Goal:

- Protect rivers and preserve their cultural/historical, ecological, fish and wildlife, recreational, geological, or scenic values.

2.5 Monitoring Question: Have rivers been recommended as wild and scenic, and what is their status?

Item to Measure: Status of Record of Decision/Legislative EIS

Results: Management of the river corridors continues to be based on their ongoing status as proposed wild and scenic rivers. There are no foreseeable plans to move forward with a Legislative EIS to recommend the rivers studied in the revised Forest Plan.

Evaluation: Direction from the Washington Office and Region Offices continues to be on ensuring there is strong local support for river designation, and that forests should not move forward with a Legislative EIS for river or wilderness recommendation unless there is support for it from the state's congressional delegation and a commitment to introduce a bill into Congress.

Forest Plan Goal:

- Increase public awareness of wilderness values. Protect and enhance resources, quality, and wilderness character of designated wilderness areas.

2.6 Monitoring Question: Have wilderness opportunities been increased and has Clear Lake been recommended for wilderness status?

Item to Measure: Status of Record of Decision/Legislative EIS

Results: Clear Lake has not been recommended for wilderness designation. The area continues to be managed as a Wilderness Study Area to protect wilderness values.

Evaluation: Similar to the Wild and Scenic River recommendations, Legislative EISs for wilderness designation will not proceed unless there is support for it from the state's congressional delegation and a commitment to introduce a bill into Congress. The Forest will continue to work with Florida's congressional delegation to gain support to draft and introduce new wilderness legislation for Florida.

2.7 Monitoring Question: Has wilderness character been protected?

Item to Measure: Percent of land in primitive and semi-primitive Recreation Opportunity Spectrum classes, trail-use data; Ecosystem plots

Results: New ecosystem plots were not established in wilderness area in 2006. The Monitoring Task Sheet for measuring protection of the wilderness character states this will be reported at 5-year intervals, but since the records of wilderness ecosystem plots were lost during a change in personnel, there is no data to report. Continuing threats to wilderness character include motorized incursions into wilderness by OHVs and ATVs, military overflights on the Ocala and Apalachicola National Forests, the boat dock structure at Juniper Prairie Wilderness, the inholding in Juniper Prairie Wilderness, and the old CCC bridge in the Mud Swamp/New River Wilderness.

Evaluation: The forest wilderness specialist will need to work with the forest botanist and district biologists to establish and measure ecosystem/vegetation plots in wilderness.

2.8 Monitoring Question: Has Natural Area Wilderness Study Area been recommended for release?

Item to Measure: Status of Record of Decision/Legislative EIS

Results: Natural Area Wilderness Study Area has not been recommended for release.

Evaluation: Action on this would normally be combined with legislative actions on other wilderness and wild and scenic rivers designations, since only Congress can release an area from Wilderness Study Area status. Until that time the area will continue to be managed as a Wilderness Study Area. At present, there is no support from Florida's congressional delegation to move forward on a legislative EIS. The Forest will continue to work with Florida's congressional delegation to gain support to draft and introduce new wilderness legislation for Florida that will include release language for Natural Area WSA.

Forest Plan Objective:

- Designated a system of trails and opened, classified roads in areas where motorized vehicles and bicycles are restricted (see Access Maps, Appendix A). This process will incorporate existing travelways as much as possible and include public participation and collaboration with local user groups.

2.9 Monitoring Question: Is the access policy having the desired effect of protecting the resources?

Item to Measure: Photo points at areas of resource concern.

Results: The Ocala NF released a Final EIS and Record of Decision for Access Designation in December of 2005 for the portion of the forest previously identified as the "Restricted Area". The Implementation is ongoing. During 2006, the Apalachicola, Osceola and Ocala NFs continued to prepare EAs for the rest of the areas not under a designated motorized road and trail system. All three Forests are expected to be finished by September or October 2007.

Evaluation: In April 2006, baseline photos for the Osceola NF were established at 62 locations within the area designated in FY 2005. The FY 2007 M&E Report will summarize the first full year of comparison of these photos.

Forest Plan Goal:

- Preserve significant heritage resources as remnants of our cultural heritage by locating, evaluating, and protecting heritage resource sites.

Forest Plan Objective:

- Evaluate for significance five archeological sites each year.

2.10 Monitoring Question: Are heritage resource sites being evaluated and protected?

Item to Measure: Number sites evaluated; Annual report on protection efforts

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Results: *Apalachicola NF:* One archeological site was evaluated in FY2006 at a borrow pit proposed for expansion and deepening for use as a helicopter dip site. Site protection efforts included investigation of a reported looting incident at Ft. Gadsden, citations to individuals camping and digging a fire pit at the historic CCC-Period Helen Guard Station site and investigating an unauthorized motorcycle event at the same site.

Ocala NF: Seismic sensors were purchased and used to monitor activity at a prehistoric site damaged repeatedly by unauthorized camping during which large holes were dug within an archeological site near the Oklawaha River. Critical maintenance to protect the historic Central Fire Tower was completed. The Regional Office gave special recognition to this forest for creative measures taken during the Juniper Wilderness Wildfire to protect a number of unique historic structures and archeological sites. Planning was initiated this FY to complete architectural plans for protective stabilization and maintenance of the historic CCC-constructed Mill House at Juniper Springs Recreation Area.

Osceola NF: Four archeological sites were recorded and evaluated during grid-based subsurface testing of an 80-acre tract proposed as an office relocation site for the Osceola District Office. This work was conducted by the National Park Service, Southeast Archeological Center through an Interagency Agreement.

Evaluation: The objective to evaluate five archeological sites in FY2006 was met. Additionally, site protection measures were within the Forest Plan objective for FY 2006. However, the majority of FY2006 work focused upon compliance work associated with fire hazard fuel reduction and fire suppression, reforestation of areas burned during wildfires, timber sales, special uses, recreation developments and forest access (designated routes) analysis. One particularly time-consuming project was an architectural inventory of 172 recreation residence structures in the Ocala and Osceola National Forests that was prompted by proposed permit renewal in 2008. An additional requirement that did not exist when the Florida Land Management Plan was written is entering all site data into a corporate database called "INFRA". FY2006 was the first year that accomplishment reporting required for the Annual Report to Congress was compiled directly from the INFRA database.

Forest Plan Goal:

- Protect, enhance, and, where necessary, restore the forests' scenery resource values.

Forest Plan Objective:

- Complete the inventory of existing scenic conditions and proposed scenic classes and implement updated Scenery Management System within 3 years of the adoption of this plan.

2.11 Monitoring Question: Are the scenic resources being protected, enhanced, and where necessary, restored?

Item to Measure: Implementation of the Scenery Management System (SMS) and management of scenery according to the recommendations of the SMS

Results: This objective was to be accomplished by June 2002. Currently, the 2380 section of the Forest Service Manual continues to be revised to provide direction for implementation of the SMS. The National SMS Training Modules are also being developed (projected to be available in FY 2007 or FY 2008) to provide orientation level, working level, and technical level knowledge. Until forest personnel have received training in SMS, the visual management system (VMS) is still in place. The inability of the Forest to implement the SMS by the target date of June 2002, is

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directly attributable to the lateness of the availability of regional and national direction on the methodology and technology to be employed.

Evaluation: Although there are significant differences between the new SMS and the old VMS, there are also many aspects of the two systems that are similar and consistent. For instance, some new mapping and field ground truthing will be necessary, but much of the mapping and other inventorying done previously for the VMS will be able to be verified and used within the SMS with only minor modifications. Likewise, many of the mitigation measures described for the VMS are also valid for the SMS. Appropriate and adequate use of the previous VMS direction for coordination with other resources will continue within the LMP until the SMS is fully implemented. Hopefully in the near future, the Forest SMS program managers will continue verifying and updating the old VMS inventories (primarily within the GIS), and defining SMS management direction as part of Forest-wide direction and management area direction, if applicable, to be included in the next update of the LMP.

Forest Plan Goal:

- Interpret forest attributes such as scenic byways, cultural sites, and special areas. Interpret forest management practices, emphasizing how sand pine clearcutting and prescribed fire improve ecosystem functions.

2.12 Monitoring Question: Do forest visitors understand Forest Service practices and do they value and respect the resource being interpreted?

Item to Measure: Number of opportunities and facilities (signs, talks, brochures) per district and quality

Results: The Apalachicola National Forest provided 24 interpretive/educational programs in FY06. The Osceola provided 17 interpretive/educational programs and the Ocala provided 21 interpretive/educational programs in FY 06. In addition 5 new brochures were designed and printed for the National Forests in Florida. On the Ocala the concessionaire at Alexander and Juniper completed 8 campfire programs with slide presentations.

Apalachicola National Forest

Event:	Two Plant Rescue Work Days	Program:	Leave no trace presentation
Audience:	26 Volunteers total	Event:	DJJ program for troubled youth
Program:	Plant identification (Wiregrass)/Ecosystem management	Audience:	25 children in troubled youth program
Event:	Audubon Meeting	Program:	Gulf of Mexico sea life, museums, and leave no trace presentation
Audience:	Audubon Society (unknown number)	Event:	Two-day DJJ program for troubled youth
Program:	Birds of prey presentation by Betsy Knight with my help in the program.	Audience:	15 children in troubled youth program
Event:	Two children's camp-outs	Program:	Field trip to Marianna Caverns to learn about caves, aquifer, and LNT principles
Audience:	35 elementary school students	Event:	Four ATV Training Classes
Program:	Leave no trace presentation	Audience:	27 adults
Event:	Canoe trip on Ochlocknee River	Program:	Tread lightly principles taught during class
Audience:	8 adults		

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Event: Florida National Trail event
Audience: 4 adults
Program: Leave no trace principles taught

Event: Church group camp-out
Audience: 21 children
Program: Leave no trace principles taught

Event: National Outdoors Activity Month
Audience: Unknown number
Program: Canoe trip on Black Creek and Apalachicola River, LNT principles taught

Event: Wakulla Wildlife Festival, Wakulla Springs State Park
Audience: 100+ people of all ages
Program: Display and individual public contact presenting natural and cultural history of the Apalachicola National Forest and recreational opportunities.

Event: Three field trips
Audience: 5-10 adults per trip
Program: Banding of adult woodpeckers, longleaf and forest management

Event: One field trip

Audience: 20 adults
Program: Banding of RCW chicks and forest ecology talk

Event: Three FSU talks
Audience: 20 people per class
Program: Woodpeckers and forest ecology

Event: Lecture
Audience: 60 FSU students
Program: Conservation biology class

Event: One lecture to Tallahassee Community College
Audience: 20 participants
Program: Forest protection for green guide program

Event: One lecture to ecotourism group
Audience: 30 participants
Program: Importance of forest biodiversity

Event: Arbor Day Festival (Crawfordville)
Audience: 100+
Program: Discussing longleaf and forest management

Event: Fishing Derby
Audience: 150 attendees
Program: Prescribed fire pamphlets handed out, forest and wildlife appreciation.

Osceola National Forest

Event: Smokey at Summers Elementary 10/4
Audience: All Kindergarteners (200)
Program: Prevention

Event: Baker County Fair 10/8-15
Audience: Thousands of participants
Program: General Forest information and prevention

Event: YMCA Swampman Classic Bike Ride 10/9
Audience: 50 adults and children
Program: General Forest information

Event: Smokey at Westside Elementary 10/21
Audience: All 1st graders (200)
Program: Prevention

Event: Columbia County Fair 11/3-12
Audience: Thousands of participants
Program: General Forest info and prevention

Event: Project REACH, Westside Elementary 11/17
Audience: 60 2nd graders
Program: General Forest info and careers

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Event: Baker County Christmas Parade
12/3
Audience: Thousands
Program: Prevention

Event: Lake City Women's Club 2/3
Audience: 20
Program: Forest History

Event: Battle of Olustee Reenactment 2/16-
20
Audience: Approximately 25,000
Program: Cultural resource interpretation

Event: Florida State Fair, Tampa
Audience: Tens of Thousands
Program: General Forest info and
prevention

Event: Healthy Kids Day at the YMCA 4/8
Audience: Approximately 300
Program: Recreating in the NF and
prevention

The Ocala National Forest

Event: Florida Black Bear Festival
Audience: 10,000 attendees, mostly
families from Central Florida
Program: Safe Camping in Bear Country
booth (all day)

Event: Florida Black Bear Festival
Audience: 10,000 attendees, mostly
families from Central Florida
Program: Fire Safety with Smokey Bear
visiting the midway (4 events)

Event: Florida Black Bear Festival
Audience: 300 attendees, mostly families
from Central Florida
Program: 5 32-hour Bear Country field trips
with bear biology and ecology stations

Event: Florida Trial Association meeting
Audience: 30 adults
Program: Native plants and invasive
species

Event: Scenic Byway Committee
Audience: 24 CAG members and media
Program: Natural, recreational, and cultural
resources along SR 40 corridor.

Event: Elderhostel

Event: Great Florida Cleanup 4/29
Audience: Approximately 50
Program: Litter awareness

Event: Florida State Still Hunters meeting
5/2
Audience: 10
Program: Access/Dog Hunting

Event: Fireman's Ride 5/6
Audience: 150
Program: Recreation/Prevention

Event: Fishing Derby 6/3
Audience: Approximately 200
Program: Recreating in the NF

Event: Teachers Tour 6/21
Audience: Approximately 50
Program: Natural resources management

Event: Civil War Expo 9/23
Audience: 300 adults and children
Program: Cultural Resource Interpretation

Audience: 40 senior campers
Program: Ecosystems of Ocala NF

Event: Spring Festival
Audience: 2000 attendees
Program: Native plants and noxious weeds
booth

Event: Forest Service Staff Ride
Audience: 120 agency staff and directors,
and high level stakeholders
Program: Land management issues

Event: Field trip with Orlando Sentinel
journalists
Audience: 336,146 central Florida residents
Program: Ecological impacts of OHV's &
new FS policy

Event: UF Dept. Wildlife freshmen welcome
Audience: 60 incoming freshmen
Program: Preparation for career in wildlife

Event: Bear School Days
Audience: 260 5th graders, 30 adults
Program: Black bear ecology & Living with
Bears

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Event: Fishing Derby
Program: Smokey Program
Audience: 200

Event: Fishing Derby
Program: Smokey Program
Audience: 200

Event: Smokey Program
Program: Fishing Derby
Audience: 150

Event: Forest Clean-up
Program: Peoples Alliance for Wildlife Survival (P.A.W.S)
Audience: 500 or more

Event: Tread Trainer Field
Program: Recreation Program-Off Highway Vehicles
Audience: 100

Event: University of Florida
Program: Informative Talk- Off Highway Vehicles Surveys
Audience: 10

Event: Florida Black Bear Scenic Byways CAG Committee
Program: Informative Talk
Audience: 10

Event: Florida Black Bear Festival
Program: Smokey Program/Wildlife
Audience: 500

Event: Butterfly Garden
Program: Wildlife/Botany/Girl Scouts of America
Audience: 25

Event: Tree Planting Sierra Club
Program: Sierra Club
Audience: 50

Forest Plan Goal:

- Contribute to the social and economic well-being of local communities by promoting sustainable use of renewable natural resources and participating in efforts to devise creative solutions for economic health.

2.13 Monitoring Question: How are we contributing to the socioeconomic well-being?

Item to Measure: Returns to counties, indirect benefits through timber, recreation, range allotments, status report on rural development programs

Results: The following tables show the gross receipts by source for the National Forests in Florida, and the payments to counties containing national forest land in FY2006.

Table 45. Gross Receipts by Source

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Source	Apalachicola	Ocala	Osceola	Choctaw-hatchee	Total
Recreation User Fees					
Timber Products Cut	146,828	34,596	787,175		968,599
Grazing Fees					
Land Use Fees	47,027	81,357	7,818		136,202
Mineral Fees			4,064		4,064
Power	42,081	33,760	2,039		77,880
Special use Fees	3,039	191,242	32,847		227,128
Fee Demo	*	*	*	*	*352,188
Total	238,975	340,955	833,943		1,766,061

Table 46. Secure Rural Schools and Community Self-Determination Act Receipts

Apalachicola		Ocala		Osceola		Choctawhatchee	
Franklin	\$ 25,527.59	Lake	\$ 269,673.55	Baker	\$258,135.07	Okaloosa	\$ 706.30
Leon	\$120,898.70	Marion	\$ 883,050.72	Columbia	\$228,318.83	Walton	\$ 703.60
Liberty	\$307,964.94	Putnam	\$ 75,765.91			Santa Rosa	\$ 145.85
Wakulla	\$195,132.96						
Total	\$649,524.19		\$1,228,490.18		\$486,453.90		\$1,555.75

Table 47. Payment in Lieu of Taxes

Apalachicola		Ocala		Osceola		Choctawhatchee	
Franklin	\$ 24,286.00	Lake	\$ 17,074.00	Baker	\$ 46,306.00	Okaloosa	\$5,632.00
Leon	\$ 103,579.00	Marion	\$ 55,821.00	Columbia	\$ 54,549.00	Santa Rosa	\$2,105.00
Liberty	\$ 264,336.00	Putnam	\$ 8,061.00			Walton	\$ 550.00
Wakulla	\$ 172,000.00						
Total	\$564,201.00		\$80,956.00		\$ 100,855.00		\$8,287.00

Evaluation: Federal legislation (Secure Rural Schools and Community Self-Determination Act of 2000, P.L. 106-393) changed the way Forest Service payments to states are calculated. Since 1908 under legislation commonly known as the 25 Percent Fund Act, 25% of any revenues from National Forest lands within state boundaries were returned to that state to be used for roads and schools. The state then distributed those funds to their counties with National Forest lands in their boundaries. The new legislation gives counties containing National Forest lands the option of taking the average high-three 25% payments they received between the years 1986 and 1999 in place of the 25% payment they would receive from Forest revenues from the most recent year. In FY 2006, all counties elected the "full payment" (the law's term used to mean the "average of the high-three"). Total payments to counties increased to \$3,459,966 in FY 2002, and remained at that level until this year. The Secure Rural Schools bill reached its termination date in 2006. No replacement legislation has passed yet. Until any replacement legislation is passed, the payments to states will revert to the 25 Percent Fund Act.

Forest Plan Standards and Guidelines for special forest products are found on pages 3-22 and 3-23 of the Forest Plan and include standards and guidelines **VG-33** through **VG-36**.

2.14 Monitoring Question: How much of each "special forest product" did we give permits to be collected and in what locations?

Item to Measure: Quantity of each type, ranger district and compartment

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Results: The actual quantity of products *collected* is unknown for 2006. The quantity for which collection permits were *issued* is shown in the following table. Permits are usually issued on a broad area basis and specific locations are generally not recorded. 668 permits were issued. 167 permits were free-use with a value of \$2,475. 501 permits were commercial permits with a total value of \$25,444.

Table 48. Special Product Summary

Location	Fire-wood (CCF)	Palmetto Berries (lbs)	Palmetto Fronds (lbs)	Plants (lbs)	Boughs (lbs)	Boughs (each)	Pine Straw (bushel)	Christmas Trees (each)	Crooked Wood (lbs)	Poles (each)	Deer-Moss (lbs)
Apalachicola	118	0	0	4	0	0	4	0	0	0	0
Osceola	2	0	0	4,000	0	0	0	0	0	0	0
Ocala	205	154,000	42,500	0	4,150	20,050	0	121	44,325	475	1,600
Total	325	154,000	42,500	4,004	4,150	20,050	4	121	44,325	475	1,600

Evaluation: In the context of acres and amounts of the above resources present on each National Forest, the quantities of these special products removed does not appear to be significant except for palmetto berries on the Ocala NF. Permits may need to be limited for palmetto berry harvesting to specific sites that will be burned in the near future. Also, minimum permit values may need to be increased to provide more efficiency of management. More detailed information on specific sites should be tracked to help determine cumulative amounts in the same area.

Forest Plan Standards and Guidelines for timber production is found on page 3-21 of the Forest Plan and includes standard **VG-29**.

2.15 Monitoring Question: How much timber was offered for sale?

Item to Measure: **MMCF (million cubic feet) of timber offered annually by type, product, and forest**

Results: 5.585 MMCF was offered for sale in FY 2006: 3.447 MMCF on the Ocala, 0.796 MMCF on the Osceola, and 1.342 MMCF on the Apalachicola. The seven year total of timber offered for sale through FY's 2000-2006 is 44.633 MMCF, which is 43% of the maximum allowed for the first 10-year period.

Evaluation: The standard in the Forest Plan related to timber production places a limit of selling no more than 103 MMCF of timber in the ten-year planning period. The total volumes offered for sale and actually sold are within the standard.

Forest Plan Standards and Guidelines for special uses are found on pages 3-10 through 3-12 of the Forest Plan and include standards and guidelines **LA-8** through **LA-18**.

2.16 Monitoring Question: Are special-use permits in compliance and if not, what actions are taken?

Item to Measure: **Number of cases of noncompliance actions taken**

Results: In FY 2006, the National Forests in Florida processed/administered 825 special use permits. Due to budget constraints, compliance monitoring was completed on a sample of special use permits in FY 2006. Based on this information, it is estimated that generally less than 1% of permits are in noncompliance.

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We find ourselves processing new applications rather than completing inspections of current uses to meet public demand. The Forest has found it to be problematic and not realistic to inform new special use applicants that we are not accepting new applications until all current uses have been inspected and brought up to standard.

Evaluation: Our biggest challenge is not having the funds and staffing to adequately manage the program.

Forest Plan Standards and Guidelines for road management are found on pages 3-7 and 3-8 of the Forest Plan and include standards and guidelines **IN-1** through **IN-3**.

2.17 Monitoring Question: How many miles of roads have been converted to another use or otherwise closed?

Item to Measure: Miles of roads closed and deleted in transportation inventory system updates

Results: 70 miles of unauthorized roads were decommissioned in FY 2006. No roads were removed from the system. The motorized route designation process is underway.

Evaluation: Road condition surveys utilizing electronic road logs were accomplished on about 10% of maintenance level 3, 4, and 5 roads and a random sampling of maintenance levels 1 and 2 roads. Decommissioning of roads has not occurred on all forests due to the studies being done on the transportation system. Once these assessments are completed and a NEPA decision has been made, all forests will work to decommission system roads and unauthorized roads in an effort to decrease road densities and put the land back into production. No actual construction of new roads occurred last year.

All forests worked on Road Access Designations for OHV use. The process to provide recreational opportunities for this use has been implemented on the Osceola NF and on Phase I for the restricted areas on the Ocala NF. Policy and direction came out for the production of the Motorized Vehicle Use Map (MVUM) and the production guide with specific details will be out in FY07. The NF's in Florida have a September 07 due date for the completion of the map. Once NEPA work is completed, implementation will begin to physically get numbers on roads open to use. This will be mostly maintenance level 2 roads since the higher-level roads are already signed and open for use.

Organizational Effectiveness

Forest Plan Goals:

- Ensure a philosophy of service is paramount in our relationship with the public in the management of forest resources.
- Be aggressive and innovative in providing for public participation in planning, managing, and monitoring of the national forests.
- Strengthen partnerships and actively pursue communication, cooperation, and partnerships with other national forests, other agencies, groups, local communities, organizations, and tribal governments to serve the public interest, consistent with the Forest Service Mission.

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- Meet regularly and often with county commissioners, congressional staff, tribal governments, and State agency directors to ensure a high level of positive communication needed to maintain national forests for quality public uses and values.

Forest Plan Objective:

- Implement surveys for determining public satisfaction with National Forests in Florida programs.

3.1 Monitoring Question: Are people satisfied with service from the National Forests in Florida?

Item to Measure: Public survey; public inquiries

Results: This item was removed by Forest Plan Amendment #2.

Forest Plan Objective:

- Ensure innovative and aggressive public involvement in national forest management by developing partnership documents with other national forests and public groups and with local, State, and other Federal agencies, and tribal governments.

3.2 Monitoring Questions: How much public participation do we have? Have partnerships been strengthened?

Items to Measure: Status report

Results: This item was removed by Forest Plan Amendment #2.

3.3 Monitoring Questions: Did we do what we said we would do?

Item to Measure: Decision documents and field review of implementation.

Results: Vegetation management activities were monitored by sale administrators.

Evaluation: No serious deviations in the implementation of planned projects has been identified. Continued review of projects need to occur.

III. Evaluation of Outcomes on the Land

Major Findings and Evaluation:

Based on the expected annual average of outcomes for the planning period, some of the monitoring items reflect that expected outcomes are not progressing within the rate to achieve the desired conditions, goals and objectives of the Plan. There are areas where monitoring indicates follow-up action is needed.

The primary causes of these lower outputs are the result of natural events such as fires and hurricane response. To a lesser extent, management emphasis on the completion of the motorized route designation process on the three forests and reduced budgets have affected our ability to achieve the objectives.

Forest Plan Objective:

- Restore between 10,000 and 15,000 acres of off-site slash pine to the appropriate native vegetation in the next 10 years. Remove slash pine from 8,000 acres of mixed longleaf/slash pine stands on the Osceola NF. The long-term objective is to restore all the off-site slash pine to the appropriate native vegetation.

2,263 acres have been restored to longleaf pine from off-site slash pine through the end of FY 2006. This cumulative total does not include an additional 658 acres of off-site slash pine restoration completed as part of fire salvage efforts. No slash pine was removed from mixed stands on the Osceola in FY 2006. In order to meet the 10-year objective, efforts should be made to increase the acreage of restoration in future years. Streamlining the process and prioritizing areas for removal of slash pine from mixed stands on the Osceola National Forest should be emphasized in the Osceola 5-year Vegetation Management Plan to be developed in FY 2008 as well as reviewing minimum management needs and Forest-wide objectives.

Forest Plan Objective:

- Thin 45,000 to 55,000 acres of longleaf and slash pine stands to release overcrowded live crowns, favor appropriate pine species regeneration, increase stand growth, allow more sunlight onto the forest floor, and increase suitable habitat for red-cockaded woodpeckers (RCWs).

During FY 2006, 3,377 acres were offered for thinning purposes. A total of 11,531 acres have been offered through the end of FY 2006. In order to meet the Forest Plan objective, areas that may be suitable for this work should be surveyed, examined, and assessed and identified in the 5-year Vegetation Management Plans being developed on all Forests as well as reviewing minimum management needs and Forest-wide objectives.

Forest Plan Objective:

- Initiate uneven-aged management with group selection harvests on 30,000 to 33,000 acres principally in longleaf pine forests with some in slash pine forests.

Through the end of FY 2006, 2,493 acres were offered with uneven-aged management harvest methods. In FY 2006, 692 acres were offered. In order to meet the Forest Plan objective, areas that may be suitable for this work should be surveyed, examined, and assessed and identified in

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the 5-year Vegetation Management Plans being developed on all Forests as well as reviewing minimum management needs and Forest-wide objectives.

Forest Plan Objective:

- Initiate irregular shelterwood harvests on between 1,800 and 2,000 acres of slash pine forests.

There were no acres of irregular shelterwood offered for harvest through the end of FY 2006. This objective may no longer be applicable as a forest objective.

Forest Plan Objective:

- Regenerate between 39,000 and 41,000 acres of sand pine on the Ocala NF

Timber harvest is the primary management tool for maintaining scrub jay habitat on the Ocala National Forest. Clear-cutting of mature sand pine regenerates the scrub habitat necessary for the jay. A regular cycle of sand pine regeneration is being employed to maintain the jays across the scrub on the Ocala National Forest. At the end of FY 2006, there were 44,597 acres of sand pine scrub in the 3-15 year old age class. A total of 18,746 acres of sand pine have been committed to regeneration harvest through the end of FY 2006. 2,645 acres of sand pine were offered for regeneration harvest in FY 2006. In order to meet the objectives of the Forest Plan, areas that may be suitable for this work should be surveyed, examined, and assessed as part of the 5-year Vegetative Management Plans being developed on the Forests as well as reviewing minimum management needs and Forest-wide objectives.

Forest Plan Objective:

- Designate the following acres of future old growth by community type (Table 30):

TABLE 49. Old-Growth Community Objectives

Old-Growth Community	Acres
Upland Longleaf Pine Forest	10,200
Southern Wet Pine Forest, Woodland, and Savannah	11,000
Cypress/Tupelo Swamp Forest	17,700
River Floodplain Hardwood Forest	2,900
Hardwood Wetland Forest	24,200
Dry and Dry Mesic Oak/Pine Forest	2,200
Coastal Plain Upland Mesic Hardwood Forest	1,700
Dry and Xeric Oak Forest, Woodland, and Savannah	2,100
Total	72,000

Old growth has been designated 35,282 acres of the Apalachicola NF. Old growth should be designated on the Ocala and Osceola NF to fulfill the 72,000 acre forest-wide old growth objective.

Forest Plan Objective:

- Designated a system of trails and opened, classified roads in areas where motorized vehicles and bicycles are restricted (see Access Maps, Appendix A). This process will

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incorporate existing travelways as much as possible and include public participation and collaboration with local user groups.

A timeline has been developed that will allow the National Forests in Florida to be in compliance with the Final Rule well before deadline of 2009. All three of the National Forests in Florida will complete their designation process in 2007.

Forest Plan Objective:

- Meet requirements of the Revised RCW Recovery Plan.

The Apalachicola population is relatively stable and shows a 3% increase since 2005. The Wakulla shows a decline of 4% since the Forest Plan was revised although there is an increase of 13% from 2005. The Osceola shows a 27% increase since the Forest Plan was revised and a 3% increase since 2005. The Ocala populations have increased 66% since the Forest Plan was revised, but had no increase from 2005. The steady increase since 1997 on the Ocala is in part due to translocations of young birds from the Apalachicola RD. The number of active clusters on the Ocala has nearly tripled since 1999, but non-paired birds occupy 30% of those clusters.

Forest Plan Goal:

- Protect rivers and preserve their cultural/historical, ecological, fish and wildlife, recreational, geological, or scenic values.

Forest Plan Goal:

- Increase public awareness of wilderness values. Protect and enhance resources, quality, and wilderness character of designated wilderness areas.

The Revised Forest Plan contains recommendations for wilderness (Clear Lake WSA) and for wild and scenic rivers (4 rivers). Regional and Washington Office direction is that legislative EISs for wilderness designation or wild and scenic river designation should not go forward unless there is support for it from the state's congressional delegation and a commitment to introduce a bill into Congress. At this time, there is no indication of support for a wilderness or rivers bill in Florida.

Roads and Trails

Designated routes for motor vehicles have been implemented on parts of the Osceola and Ocala National Forests, and the forests are in the process of designating routes in the remaining portions. The Apalachicola NF is expected to complete the designation process in September 2007. Impacts from motor vehicles continue in some key areas such as wetland habitats and ephemeral ponds. The forest continues with temporary closures to protect these areas until the route designation process is complete and the Motor Vehicle User Maps are produced.

Recreation

Recreation opportunities remain relatively unchanged since the 1999 Revised Forest Plan was signed. Acquisition of small tracts of land for the Florida National Scenic Trail has proceeded, and the FTA continues to maintain high involvement of its volunteers in construction and maintenance of the trail and various facilities, as well as maintaining strong partnerships for federal funding. No change in wilderness opportunities or demand have been identified. In FY2006, the Recreation Visitor Use inventory was once again conducted on the National Forests in Florida.

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Watershed

Required soil and water resource protection is being accomplished. Increasing amounts of algae in spring runs throughout Florida continue to be of concern, and the Florida Department of the Environment (FDEP) is currently conducting a study of springs to determine the cause and extend of increased algae levels; a report has not yet been released.

Demands of the Public and Emerging Issues

A Final Planning Rule has been implemented by the Agency and is in effect. The National Forests in Florida are operating under the transition period identified in this Rule.

The 2005 Travel Management Rule has spurred the forest to complete OHV route designation for all three forests by September 2007. A Forest Plan amendment for consistency with this Rule has been completed.

Research Needs

Monitoring efforts during 2006 did not disclose any immediate needs for research efforts to support the implementation and monitoring of the National Forests in Florida Forest Plan. Many projects, however, could contribute to understanding forest ecosystem interactions as well as impacts of management and public activities on forest systems. A better understanding of these interactions would allow managers to identify any changes needed in management activities or direction in the Forest Plan. Possible research needs could include:

1. Research to determine how long T&E plant species are able to persist between disturbances in sand pine scrub habitat.
2. Research to evaluate the long-term effectiveness of management techniques, such as prescribed burning or mechanical roller chopping, for site preparation in Florida scrub jay habitat. Special consideration should be given to the effectiveness of combining mechanical treatments and burning.
3. Research to determine habitat variables affecting movement of Florida scrub jays over time, potential barriers to movement, and spatial constraints.
4. Research on harvest methods and other options for removal of small diameter wood for hazardous fuel reduction. Research would focus on overcoming barriers that hinder use of biomass and development of markets utilizing biomass for fuel or other purposes.
5. Research to determine upland use by adult and juvenile flatwoods salamanders.
6. Research to determine impacts of varying degrees and types of habitat fragmentation on flatwood salamanders and striped newts.
7. Research to evaluate pond management strategies to optimize habitat for flatwood salamanders and striped newts.
8. Research current issues related to forest management, specifically prescribed burning and community fire prevention in the Wildland-Urban Interface (WUI).

IV. M & E Action Plan

1.0 Actions NOT requiring Forest Plan Amendment or Revision:

Action: Solicit support from the Florida congressional delegation for designation of wilderness and wild and scenic rivers recommended in the Revised Forest Plan.

Responsibility: Forest Public Affairs Officer

Status: Carried over from 2005 Monitoring Report

Completion Date: FY2008-2010

Action: Develop a strategy to prioritize and improve progress toward the vegetative management objectives.

Responsibility: Ecosystem Staff Officer, District Rangers, District TMAs and Silviculturists

Status: A five-year vegetation management plan is currently being finalized on the Ocala National Forest. Existing vegetation management plans will be updated on the Apalachicola and Osceola National Forests in FY 2008.

Completion Date: Ongoing, updated annually.

Action: Develop criteria and methodology to establish minimum accomplishment levels needed to sustain populations of Federally Listed species dependent on vegetation management practices such as thinning, burning, and timber harvest. Some of the Forest-wide Goals and Objectives in the 1999 Forest Plan were developed from a standpoint of accomplishments and outputs associated with the projected ASQ and budgets, rather than as minimum accomplishment objectives. This action is needed to avoid potential adverse effects on listed species in the event that budgets are inadequate to meet the Forest Plan objectives. This action will be integrated with the five-year vegetation management plans and annual budgeting processes currently underway on the Forests.

Responsibility: Ecosystem Staff Officer, Wildlife Biologists, District TMAs and Silviculturists

Status: In initial development.

Completion Date: 2008.

Action: Designate old growth on the Ocala and Osceola NF.

Responsibility: District Rangers and Silviculturists

Status: Begin the process in FY 2008 and complete by 2009

Completion Date: FY 2008

Action: Develop and implement strategies to monitor TES species which are discussed in the US Fish and Wildlife Service Biological Opinion on Phase I of the Ocala National Forest Access Management Plan.

Responsibility: Forest Biologist, Ocala National Forest biological staff.

Status: On May 30, 2007, the USFWS amending their Biological Opinion to remove Reasonable and Prudent Measure #3. Additional work is still need on development of a strategy for sand skink. A strategy has been developed to monitor the listed plants. Results will be reported in the FY 2007 M&E Report.

Completion Date: Ongoing.

Action: It is recommended that methodology be reviewed and updated for monitoring question 1.23.

Responsibility: Forest Silviculturist, District TMAs and Botanist

Status: Beginning proposal development

Completion Date: 2008

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Action: Develop and implement a strategy to meet RCW population increase objective of 5% increase per year on all Forests, with special emphasis on the Wakulla and Osceola Ranger Districts. Utilize the 5-year vegetation management plan, RCW Landscape Scale Assessment. In addition to burning, and harvest, special emphasis should be given to installing inserts in inactive clusters.

Responsibility: Forest Biologist, Ecosystems Staff Officer, Forest Silviculturists, District Biologists, District TMAs

Status: NA

Completion Date: 2008

2.0 Actions Requiring Amendment or Revision of the Forest Plan:

Table 50. Completed Amendments to the 1999 Forest Plan.

Completed Amendments	Year Completed
#1 Supplement to the FEIS Vegetation Management in the Coastal Plain/Piedmont	2002
#2 Updates of Various Standards and Management Area Allocation on the Osceola NF	2004
#3 Update of RCW Recovery Plan	2005
#4 Removal of FW Standard VG-24	2006
#5 Update for Consistency with the 2005 Travel Management Rule	2006
#6 Addition of Management Area 4.6 for Management of the FNST	2006
#7 Reallocation of Scrub-jay Management Area 8.2 to 8.4	2007

Action: Remove Monitoring Question 1.15, “How many acres have we initiated irregular shelterwood harvest? Is the irregular shelterwood method producing the anticipated desired conditions in the slash pine forest?”

Responsibility: Forest Planner, Forest Silviculturist

Status: Initial development of proposal in progress

Completion Date: 2008

Appendix A Interdisciplinary Team Members

Monitoring data were collected by all staff groups in the Forest Supervisor's Office and from the Ranger Districts. The Interdisciplinary Team that assembled the monitoring data, evaluated the results, and recommended changes included:

Name	Discipline
David Harris	Forest Planner
Haven Cook	Recreation Planner
Louise Kirn	Botanist
William Carromero	Botanist
Skip Griep	Wildlife Biologist
Bruce Harvey	Fire Management Officer
Kyle Jones	Lands Program Manager
Rhonda Kimbrough	Forest Archeologist
Kathy O'Bryan	Civil Engineer
Richard Shelfer	Silviculturist
Cindy Huber	Air Quality Specialist
Greg Lussier	Forest Interpretive Specialist
Kent Wimmer	FNST Coordinator
Bobby Grinstead	Fisheries Biologist